

ELEVEN SPECIES OF AUSTRALIAN AXIIDAE (CRUSTACEA: DECAPODA: THALASSINIDEA) WITH DESCRIPTIONS OF ONE NEW GENUS AND FIVE NEW SPECIES.

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ABSTRACT

Eleven species of the decapod crustacean family Axiidae: *Neaxius glyptocercus*, *Bouvieraxius rudis*, *Ambiaxius franklinae* sp. nov., *Scytoleptus serripes*, *Platyaxius brevirostris* gen. and sp. nov., *Eutrichocheles brocki*, *E. austrinus* sp. nov., *E. pumilus* sp. nov., *Calaxius acutirostris*, *Acanthaxius polychaetes* sp. nov., and *Axiopsis consobrina* are reported and described from northern Australia. The lectotype of *Axiopsis consobrina* is selected to separate the species from *A. tsushimaensis*.

KEYWORDS: Crustacea, Decapoda, Thalassinidea, Axiidae, *Neaxius*, *Bouvieraxius*, *Ambiaxius*, *Scytoleptus*, *Platyaxius*, *Eutrichocheles*, *Calaxius*, *Acanthaxius*, *Axiopsis*, new taxa, northern Australia; *Axiopsis consobrina* lectotype.

INTRODUCTION

Specimens of the family Axiidae represented in the Northern Territory Museum's collections were examined. Among the eleven species found, one new genus, *Platyaxius* gen. nov., and five new species, *Platyaxius brevirostris*, *Eutrichocheles austrinus*, *E. pumilus*, *Ambiaxius franklinae*, and *Acanthaxius polychaetes* spp. nov., are described below, and two known species, *Bouvieraxius rudis* (Rathbun) and *Calaxius acutirostris* Sakai and de Saint Laurent, are newly recorded for Australia.

Up to now, eleven known species were recorded from Australian waters: *Dorphanaxius appendiculis* (Poore and Griffin), *Eutrichocheles brocki* (De Man), *Axius australiensis* (De Man), *Axiopsis consobrina* (De Man), *Calocarides werribee* (Poore and Griffin), *Neaxius acanthus* (A. Milne Edwards), *Neaxius glyptocercus* (von Martens), *Strahlaxius plectrorhynchus* (Strahl), *Strahlaxius waroona* (Poore and Griffin), *Scytoleptus serripes* Gerstaecker, and *Spongi-axius brucei* (Sakai).

Among De Man's type specimens of *Axiopsis consobrina*, two species, *A. consobrina* and *A. tsushimaensis*, were found to be included; therefore the lectotype of *A. consobrina* is designated below.

Abbreviations. CL, carapace length; R, rostrum length; r, rudimentary; TL, total length in millimetres measured by attaching a thread from the tip of the rostrum to the end of the telson; ITZA, Instituut voor Taxonomische Zoölogie, University of Amsterdam; NTM, Northern Territory Museum, Darwin; USNM, National Museum of Natural History, Washington, D.C.; ZMUC, Zoological Museum, University of Copenhagen.

SYSTEMATICS

Family Axiidae Huxley

Axiidae Huxley, 1879: 785; - Sakai and de Saint Laurent, 1989: 5.

Remarks. The family Calocarididae Ortmann, 1891, was resurrected and rediagnosed by Kensley (1989: 960). However, it is very difficult to separate the Calocarididae from the Axiidae on morphological features other than pleopods 1-2. On the other hand, the subfamily Coralaxiinae Sakai and de Saint Laurent, 1989, was based on the type species of *Coralaxius abelei* Kensley, 1981. *Coralaxius abelei* is simi-

lar to a fossil species, *Schlueteria tetracheles* Frisch and Kafka, 1887, in the form of the chelipeds and the rounded chela of pereopod 2, and is distinct from the Axiidae in the shape of the rostrum, the scaphocerite of antenna 2, the exopod of maxillipeds 2-3, the biunguiculate dactyls of pereopods 3-5, the absence of epipods on pereopods 1-5, and the flagellum of the exopod of maxilliped 3 bending at an acute angle from its proximal segment. In the Axiidae as well as the Calocarididae, the simple dactyls of pereopods 3-5, the presence of epipods 1-5, the flagellum of the exopod of maxilliped 3 connected with its proximal segment in a straight line, are distinct characteristics of the morphology (Sakai and de Saint Laurent 1989: 10). As a result, the family Calocarididae cannot be placed at the same level of the family Axiidae, as it is more reasonable to separate *Coralaxius* into the subfamily Coralaxiinae, apart from the genera of Axiinae, so as to maintain the taxon *Thalassinidea*.

Species of the family Axiidae are found from the littoral to the abyssal regions (down to 1788 m depth), and from the tropics to subarctic regions. Fourteen genera of the family Axiidae are known from Australian waters: *Axius*, *Neaxius*, *Strahlaxius*, *Spongiaxius*, *Bouvieraxius*, *Ambiaxius*, *Dorphanaxius*, *Scytoleptus*, *Platyaxius* gen. nov., *Eutrichocheles*, *Calaxius*, *Acanthaxius*, *Calocarides*, and *Axiopsis*.

Genus *Neaxius* Borradaile

Neaxius s. str. Borradaile, 1903: 537.

Neaxius - Sakai and de Saint Laurent, 1989: 29.

Definition. Dorsomedian region of carapace extending forward almost at same level with rostrum; anterolateral margin with teeth. Rostrum bifurcate at tip, continuous laterally with lateral carina of carapace. Telson usually wider than long, with one or more strong transverse ridges on dorsal surface. Eye subglobose, cornea pigmented. Antennal segment 2 with an elongate distodorsal tooth, scaphocerite of moderate size. Pereopod 1 unequal. Propod of pereopod 3 without transverse rows of spines laterally. Pleurobranchs present. Pleopod 1 in male absent, and in female, pleopod 1 biarticulate, consisting of proximal segment and distal multiarticulated segment. Pleopods 2-5 in both sexes broad, with appendices internae, and pleopod 2 in male without appendix masculina. Uropodal exopod without transverse suture.

Type species. *Axia acanthus* A. Milne Edwards, 1878, designated by Borradaile, 1903: 537.

Remarks. In the generic definition given by Sakai and de Saint Laurent (1989: 29), it was stated that pleopod 1 in females is a single leaf. However, it bears a proximal segment, so the definition is here revised to state: "...pleopod 1 in females biarticulate..." in this paper, in addition to other characters such as the dorsomedian region of the carapace and antennal segment 2.

Neaxius acanthus A. Milne Edwards and *N. glyptocercus* are known from Australian waters.

Neaxius glyptocercus (von Martens)

Axius glyptocercus von Martens, 1868: 613; Haswell, 1882: 165.

Axius (*Neaxius*) *glyptocercus* - De Man, 1925: 50, fig. 1; De Man, 1925b: 13; Poore and Griffin, 1979: 236, fig. 8.

Neaxius glyptocercus - Sakai and de Saint Laurent, 1989: 30.

Material. NTM Cr.00068, one female, TL 25.5, CL 9.0, sand-flat pools under stone, Bullocky Point, Darwin, NT, 12°26.2'S 130°49.9'E, 2 October 1981, coll. J.N.A. Hooper.

Type locality. Cape York, Australia.

Distribution. Darwin, Northern Territory, to Moreton Bay, Queensland, Australia.

Genus *Bouvieraxius* Sakai and de Saint Laurent

Bouvieraxius Sakai and de Saint Laurent, 1989: 45; - Sakai, 1992: 165.

Posthonocaris Kensley, 1989: 964.

Definition. Gonochoristic, but with hermaphroditic forms. Dorsomedian region of carapace slightly convex anteriorly, posterior to rostrum. Rostrum narrowly triangular, continuous laterally with lateral carina of carapace. Telson longer than wide. Eye subglobose, cornea pigmented. Antennal segment 2 with a prominent distodorsal tooth; scaphognathite also prominent. Pereopod 1 subequal. Pereopod 3 with propod bearing transverse rows of spines laterally. Genital pores on coxae of pereopods 3 and 5. Pleopod 1 in male two-segmented, distal segment spatulate; pleopod 2 slender, with articulated endopod bearing appendix interna and appendix masculina at about midlength, appendix masculina elongate, reaching beyond endopod and exopod; pleopods 3-5 without appendices

internae. Pleopod 1 in female slender, biarticulate, distal segment multiarticulate; pleopods 2-5 without appendices internae. Uropodal exopod with transverse suture.

Type species. *Axiu longipes* Bouvier, 1905, original designation by Sakai and de Saint Laurent, 1989: 45.

Remarks. *Posthonocaris* Kensley, 1989, was reviewed by Sakai (1992: 169). It is confirmed here that in *B. rudis* (Rathbun, 1906) and *B. keiensis* Sakai, 1992, the anterolateral margin of carapace has a spinule, although in the definition of *Bouvieraxius* I neglected to note the presence of the spinule (Sakai 1992).

Bouvieraxius rudis (Rathbun, 1906)

Axiu rudis Rathbun, 1906: 894, fig. 51; Balss, 1925: 209.

Axiopsis (*Axiopsis*) *rudis* - De Man, 1925b: 70.

Bouvieraxius rudis - Sakai and de Saint Laurent, 1989: 46, figs 13-14.

Lophaxius rudis (?= *Posthonocaris rudis*) - Kensley, 1989: 964.

Material. NTM Cr.000886, one ovig. female, TL 23.5, CL 8.0, 19°50.0'S 115°34.0'E, 80 m, 19 September 1982, coll. NT Fisheries Dept.

Remarks. In the present ovigerous specimen the first pleopod shows a uniramous, biarticulate appendage, the distal segment is multiarticulated, the second pleopod has no appendix interna, and the genital pores are present on the coxae of pereopods 3 and 5. The rostrum has three lateral teeth, of which the distal one is small, while the proximal two are sharp. In the female type specimen (USNM 30535) the rostrum has only two sharp lateral teeth (Sakai and de Saint Laurent 1989: 46, fig. 12).

Type locality. South coast of Molokai Is., Hawaii, 92-212 fms (168-388 m).

Distribution. Hawaii, 73-426 m depth; New Caledonia; Western Australia; Malagasy Republic.

Genus *Ambiaxius* Sakai and de Saint Laurent

Ambiaxius Sakai and de Saint Laurent, 1989: 54.

Callistocaris Kensley, 1989: 961.

Definition. Hermaphroditic. Dorsomedian region of carapace with anterior convexity posterior to rostrum; anterolateral margin unarmed.

Rostrum styliform, upturned apically, continuous laterally with an acute anterior tooth of lateral carina of carapace. Telson longer than wide, and unarmed on dorsal surface. Eye flattened laterally, fusing with carapace, cornea unpigmented. Antennal segment 2 with reduced distodorsal tooth, scaphocerite spike-like, and antennal segment 4 elongate. Pereopod 1 slightly asymmetrical. Pereopod 3 with propod bearing lateral transverse rows of spines. Genital pores present on coxae of pereopods 3 and 5. Pleurobranch absent. Pleopod 1 biarticulate, distal segment bilobed, and with small medial patch of hooks. Pleopod 2 with appendix masculina fused basally with appendix interna. Pleopods 3-5 slender, without appendices internae. Uropodal exopod with transverse suture.

Type species. *Calocaris alcocki* McArdle, 1900, designated by Sakai and de Saint Laurent, 1989: 54.

Remarks. *Ambiaxius* Sakai and de Saint Laurent, and *Callistocaris* Kensley were established on the same type species, *Calocaris alcocki* (McArdle, 1900), but the latter genus is a junior synonym of the former.

The definition of the genus *Ambiaxius* given by Sakai and de Saint Laurent (1989: 54) is here revised with respect to characters of pereopods 1 and appendices internae of pleopods 3-5 to read "Pereopod 1 slightly asymmetrical, and pleopods 3-5 without appendices internae". McArdle (1900: 477) already stated "The chelipeds are long and slightly asymmetrical", and Barnard (1950: 503) noted that ".....none of the pleopods carry an appendix interna."

Ambiaxius franklinae sp. nov. represents the first record of the genus *Ambiaxius* for Australian waters.

Ambiaxius franklinae sp. nov. (Figs 1-2)

Material. HOLOTYPE - QM WI 3237, female, TL 41.5, CL including rostrum 16.5, R 6.0, 17°19.76'S 147°28.05'E, 1310-1357 m, 11 May 1986, coll. FRV *Franklin*, St. 27-2, beam trawl.

Description. Carapace smooth (Fig. 1). Dorsomedian region depressed anteriorly; median and submedian carinae smooth; lateral carina smooth, with an acute tooth anteriorly. Rostrum (Fig. 2A, B) styliform, largely upturned with acute apex, with small tooth laterally at mid-length on right side, but unarmed on

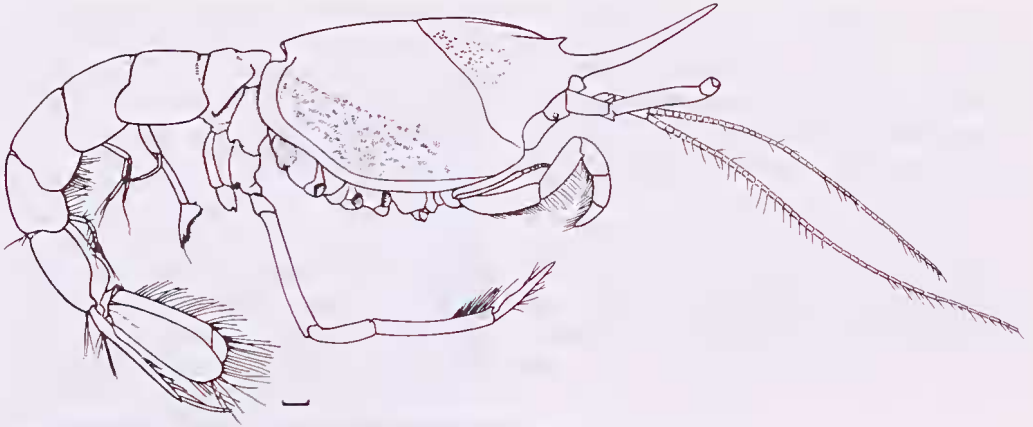


Fig. 1. *Ambiaxius franklinae* sp. nov.: female, holotype, QM W1 3237. Scale in 1 mm divisions.

left. Cervical groove located about at mid-length of carapace, extending laterally to near anteroventral corner. Posterior thoracic region smooth on dorsal surface, punctate on branchial region. Abdomen smooth, relative lengths of abdominal somites 1-6 and telson 1; 1.2; 1.2; 1.2; 1.2; 1.5 and 2.0. Pleuron 1 short, deflexed posteroventrally; pleura 2-5 produced anteroposteriorly, and rounded on ventral margins. Telson (Fig. 2C) 1.8 times as long as broad, with median transverse tuft of setae at anterior fourth of length, and posterior to tuft, sulcate medially on dorsal surface; lateral margins unarmed, slightly expanded in proximal fourth length; posterior margin broadly rounded, without median tooth.

Eye triangular, carinate dorsolaterally, and devoid of pigment and corneal facets. Antennular peduncle reaching to proximal third of antennal segment 4, segment 1 about as long as segments 2 and 3 combined, produced proximally on lateral margin, and with small tooth. Antennal segment 2 with a minutely pointed distodorsal tooth, scaphocerite small, apically pointed on right (Fig. 1), but missing on left side (Fig. 2B); segment 3 triangular, acute at distal apex; segment 4 elongate, 2.2 times as long as segment 2; segment 5 short, a quarter length of segment 4, almost reaching to rostral tip. Maxilliped 2 with epipod, but devoid of podobranch. Maxilliped 3 pediform; coxa with medial tooth; basis unarmed; ischium 3.5 times as long as broad, with crista dentata; merus slightly shorter than ischium, with a medial subterminal tooth; carpus three-quarters the length of merus; propod three-quarters the length of carpus, subequal to dactyl. Exopod composed of proximal stem and segmented flagellum, reaching to near distal end of

merus. Epipods with rudimentary podobranchs, and foliaceous arthrobranchs (Fig. 2D).

Pereopods 1 missing. Coxa with postmedial tubercle. Pereopod 2 chelate. Coxa with small posterior tooth; ischium with subterminal ventral tooth; merus long, unarmed; carpus 0.4 times length of merus; chela 1.6 times length of carpus. Pereopod 3 missing. Coxa unarmed. Pereopod 4 simple. Coxa and ischium unarmed; merus long, unarmed; carpus 0.4 of merus; propod more than half length of carpus; dactyl about 0.33 of propod. Pereopod 5 simple. Ischium unarmed; merus long; carpus 0.55 of merus; propod subequal to meral length; dactyl 0.7 of propod. Epipods with rudimentary podobranch on maxilliped 3 and pereopods 1-3 present; pair of foliaceous arthrobranchs on maxilliped 3 and pereopods 1-4 (Fig. 2D) present.

Branchial formula as follows:

	Maxillipeds			Pereopods				
	1	2	3	1	2	3	4	5
Epipods	1	1	1	1	1	1	1	-
Podobranchs	-	-	r	r	r	r	-	-
Arthrobranchs	-	-	2	2	2	2	2	-
Pleurobranchs	-	-	-	-	-	-	-	-

Pleopod 1 (Fig. 2E) biarticulate; proximal segment flattened, and distal segment consisting of two lobes fused longitudinally with one another; medial lobe triangular distally, and with medial patch of hooks proximally, and lateral lobe rounded distally. Pleopod 2 bifurcate; endopod consisting of protopod and foot-shaped appendix masculina (Fig. 2F), edged with double rows of spines on medial margin, and with small appendix interna proximally;

exopod slender. Pleopods 3-5 (Fig. 2G) slender, consisting of articulated exopod and endopod, and without appendices internae.

Uropodal exopod elongate, twice as long as broad, lateral margin with a small tooth subterminally; distinct transverse suture present. Uropodal endopod also elongate, 2.2 times as long as broad, slightly exceeding telson, lateral margin with small tooth at distal end on right side, but unarmed on left.

Etymology. The species name is derived from the FRV *Franklin*, which collected this interesting specimen from deep waters in the Coral Sea.

Remarks. The present species is very similar to *A. alcocki* (McArdle, 1900). However, it is

distinguished by the following features: the rostrum is longer than in *A. alcocki*, about half the length of the carapace, reaching to the end of the antennal peduncle, and the posterior thoracic region is without a median carina. The type specimen of *A. alcocki*, 53.5 mm in total length, from off Sri Lanka, 992 m depth, was reported by McArdle (1900: 476) as "length of rostrum 5 mm, carapace to base of rostrum 16.5 mm", that is, the rostrum is about a third of the length of the carapace, and in the figure (Alcock and McArdle 1901: pl. 50, fig. 4) the rostrum reaches only to the proximal part of antennal segment 4. Later, Stebbing (1915: 59, 1917: Pl 91) described his specimen from NE Cape Natal, 805 m depth, 33

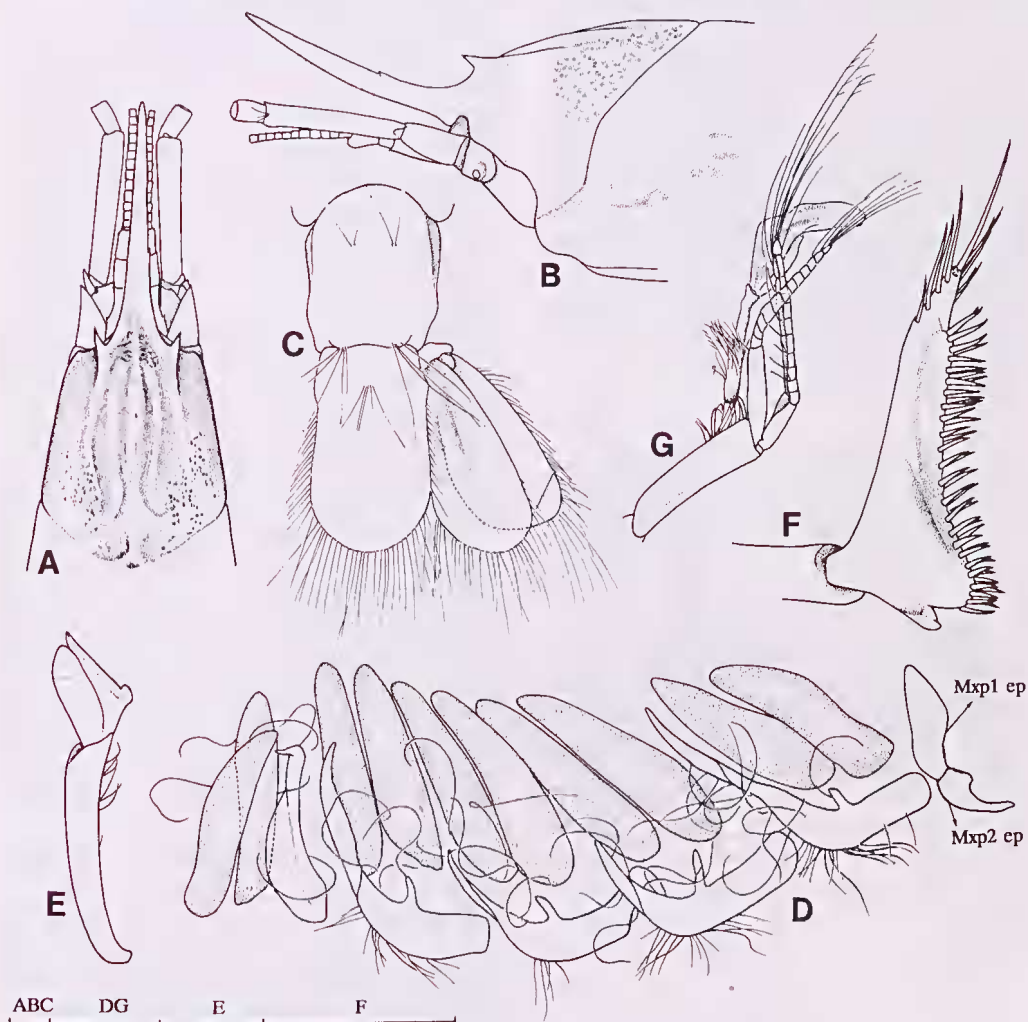


Fig. 2. *Ambiaxius franklinae* sp. nov.: female, holotype, QM WI 3237: A, dorsomedian region of carapace, dorsal aspect; B, dorsomedian region, lateral aspect; C, abdominal somite 6 and tail-fan, dorsal aspect; D, gills and epipods on maxilliped 2 to pereopod 4; E, pleopod 1, lateral aspect; F, appendix masculina attached to appendix interna in pleopod 2, lateral aspect; G, pleopod 3 with egg-thread, lateral aspect. Scale in 1 mm divisions.

mm in total length, as having a rostrum that reaches to the distal part of antennal segment 4.

Distribution. North-West Shelf, Australia.

Genus *Scytoleptus* Gerstaecker

Scytoleptus Gerstaecker, 1859: 155. - Sakai and de Saint Laurent, 1989: 36.

Definition. Dorsomedian region of carapace bordered by submedian carina on each side; median and submedian carinae ending short of front of carapace in a strong tooth, arched steeply to rostrum; anterolateral margin of carapace unarmed. Rostrum short. Telson longer than wide, arched dorsally. Eye subglobose, cornea pigmented. Antennal segment 2 with reduced distodorsal tooth, scaphocerite short. Pereopods 1 unequal. Pereopod 3 with propod bearing transverse rows of spines laterally. Pleurobranches present. Pleopod 1 in male biarticulate, consisting of two segments, and in female, a proximal segment and a multiarticulate flagellum. Pleopods 2-5 in both male and female (Fig. 3C-D) biramous, with appendices internae, but without appendix masculina in male. Uropods arched on surface; exopod without transverse suture.

Type species. *Scytoleptus serripes* Gerstaecker, 1856, by monotypy.

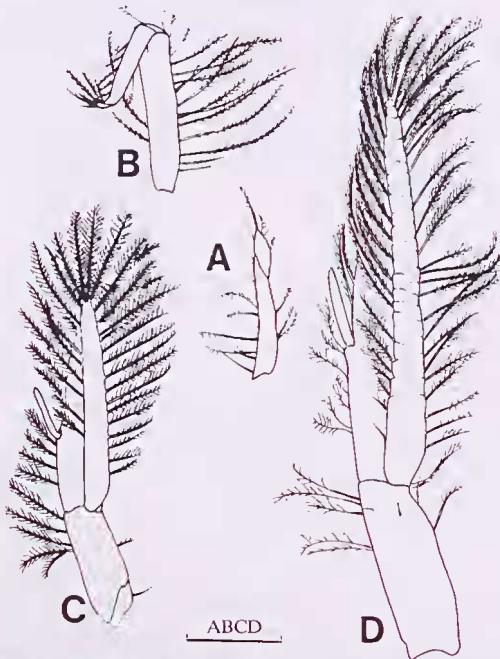


Fig. 3. *Scytoleptus serripes* Gerstaecker, male, NTM Cr.000802: A, pleopod 1 in male, anterior aspect; B, pleopod 1 in female, anterior aspect; C, pleopod 2 in female, anterior aspect; D, pleopod 2 in female, anterior aspect. Scale in 1 mm divisions.

Remarks. The generic definition is revised here by some additional characters. Pleopod 1 in males was defined as a slender leaf by Sakai and de Saint Laurent (1989: 36), however, it should be described as a biarticulate segment consisting of two segments. The status of the dorsomedian region of the carapace, and antennal segment 2 are added to the present definition.

Scytoleptus serripes Gerstaecker (Fig. 3)

Scytoleptus serripes Gerstaecker, 1856: 158, pl. 6, figs 1-4; - De Man, 1925b: 49, pl. 4, figs 9-9h; - Poore and Griffin, 1979: 243, fig. 11. - Sakai and de Saint Laurent, 1989: 37.

Material. NTM Cr.000802, one male, TL 28.7, CL 9.5, *Bopyrina* sp. attached in left gill-chamber (K. Sakai det.). NTM Cr.000802, one female, TL 38.0, CL 14.0, Lee Point, Darwin, NT, shore reef flat, 7 April 1975, coll. A.J. Dartnall. NTM Cr.000919, one male, TL 19.0, CL 8.0, Lee Point, Darwin, NT, 13 December 1981, coll. J.N.A. Hooper. NTM Cr.000839, one male, TL 13.0, CL 4.5, Table Head, Port Essington, NT, 11°13.5'S 132°10.5'E, 3 May 1982, coll. A.J. Bruce. NTM Cr.000780, one male, TL 11.0, CL 4.0, gastric region broken, St. No. CP 162, Caiman Creek, Port Essington, NT, 11°10.5'S 132°03.8'E, rubble, 4 m, 17 May 1983, coll. N.L. Bruce.

Remarks. The present Australian specimens agree with Gerstaecker's female type specimen, probably from Port Natal, but differ from De Man's male specimens (De Man 1925b: 49, pl. 4, fig. 9c-f) from off Seba, Savu, Indonesia. In De Man's male the pleopodal protopod is broadly oval, the endopod with an appendix interna (= stylamblys) and an appendix masculina (De Man 1925b: 50, pl. 4, fig. 9c), while in the present male (Fig. 3C) and female (Fig. 3D) pleopod 2 has an elongate protopod, the endopod with an appendix interna, but no appendix masculina.

Type locality. Probably Port Natal, South Africa.

Distribution. South Africa; Malagasy Republic (= Madagascar); Aldabra Is.; Mozambique; Zanzibar Is.; Mauritius; Indonesia; Luzon, Philippines; northern and western Australia.

Platyaxius gen. nov.

Definition. Dorsomedian region of carapace slightly convex anteriorly, with flat dorsal plat-

form bearing lateral, submedian and median carinae; anterolateral margin unarmed. Rostrum triangular, notched dorsally, spinulate laterally, and continuous laterally with lateral carina of carapace. Cervical groove distinct dorsally, but absent laterally. Abdominal pleura rounded ventrally. Telson longer than wide; posterior margin rounded, without median tooth. Eye subglobose, cornea pigmented. Antennal segment 2 with prominent distodorsal tooth, scaphocerite also prominent. Pereopods 1 subequal, with broadened merus. Pereopod 3 with propod bearing transverse rows of spines on ventrolateral surface, dactyl short, with longitudinal rows of spines on lateral and ventral surfaces. Pleopod 1 in male absent, and in female biarticulate, distal segment multiarticulate. Pleopods 2-5 in both male and female with free appendices internae, and pleopod 2 in male with appendix masculina. Uropodal exopod without transverse suture.

Type species. *Platyaxius brevirostris* sp. nov., by present designation; gender, masculine.

Etymology. The generic name is derived from the Greek, "platys", meaning flat, and the genus name *Axius*, because the type species, *Platyaxius brevirostris* sp. nov., is characterised by the flat dorsomedian region of the carapace.

Remarks. The type species, *Platyaxius brevirostris* sp. nov., is closely related to *Eiconaxius parvus* Bate, 1888. De Man's specimens of *Eiconaxius parvus* from Kai Island, 560 m depth, are different from Bate's female type from off the Kermadec Islands at 952 m depth. In De Man's *Eiconaxius parvus* the broadened merus of pereopod 1 is serrate on the ventral margin (De Man 1925b: 43, pl. 3, fig. 7c) as in *Platyaxius brevirostris*, however, in Bate's female type of *Eiconaxius parvus* it is smooth (Bate 1888: 45, pl. 5, fig. 4). *Platyaxius brevirostris* is also similar to *Eiconaxius sibogae* in morphological features of the uropodal endopod. In *Platyaxius brevirostris* and *Eiconaxius sibogae* the uropodal endopod shows a serrate projection at the posterolateral angle (De Man 1925b: 35, pl. 2, fig. 4c). However, *Eiconaxius parvus* and *Eiconaxius sibogae* are fundamentally different from *Platyaxius brevirostris*, because in species of *Eiconaxius* the rostrum is distinctly smooth on the lateral margin, and its tip is subacute (De Man 1925b: 16); the dorsomedian region of the carapace is marked by the median carina which may branch into two carinae posteriorly, and without submedian carina; the cervical groove is inconspicuous; the dactyli

of the pereopods are roundedly curved, while in *Platyaxius brevirostris* the rostrum is triangular, with three to four lateral teeth, and with an obtuse tooth apically; the dorsomedian region of carapace is flat, being marked by the median, submedian and lateral carinae; the cervical groove is clearly defined; and the dactyli of pereopods are short and incurved.

Platyaxius brevirostris sp. nov.
(Figs 4-5)

Type material. HOLOTYPE - NTM Cr.000784a, one male, TL 18.0, CL 5.5, 18°33.4'S 118°35.4'E, 141 m, 15 April 1983, coll. FRV *Soela*, trawl. PARATYPE - NTM Cr.000784b, one female, TL 18.0, CL 5.5, same data as holotype.

Diagnosis. Dorsomedian region of carapace with median carina bearing thick protuberance at anterior quarter of length. Rostrum triangular, with three to four obtuse lateral teeth. Cervical groove distinct dorsally, but inconspicuous anterolaterally. Maxilliped 3 with three medial meral teeth. Pereopods 1 subequal; merus broad, serrate on ventral margin. Telson longer than wide; posterior margin oval, without median tooth. Uropodal endopod extended posterolaterally to form serrate semicircular projection.

Description of male holotype. Carapace (Fig. 4A) smooth. Dorsomedian region of carapace with flat platform; lateral carina unarmed, extending to posterior third of length; submedian carina also unarmed, incurved anteriorly, extending backward to posterior third of length; median carina armed with six denticles, extending from base of rostrum to broadened protuberance at anterior fourth of length; anterolateral margin unarmed. Rostrum (Fig. 4B-C) triangular with an obtuse tooth apically, three to four obtuse teeth laterally, continuous laterally with lateral carina of carapace. Cervical groove distinct dorsally, but absent anterolaterally. Posterior thoracic region without median dorsal carina. Abdomen sparsely setose, relative lengths of somites 1-6 and telson 1; 2; 2; 2; 2 and 3.5. Pleuron 1 narrow, deflexed posteroventrally; pleuron 2 unarmed, broadly rounded on ventral margin; pleura 3-5 rounded, each provided with denticle on anteroventral angle; pleuron 6 triangular, with an apical tooth ventrally. Telson (Fig. 4G) setose dorsally, 1.3 times as long as wide, lateral margins expanded with proximal tooth in proximal third, and with a fixed poste-

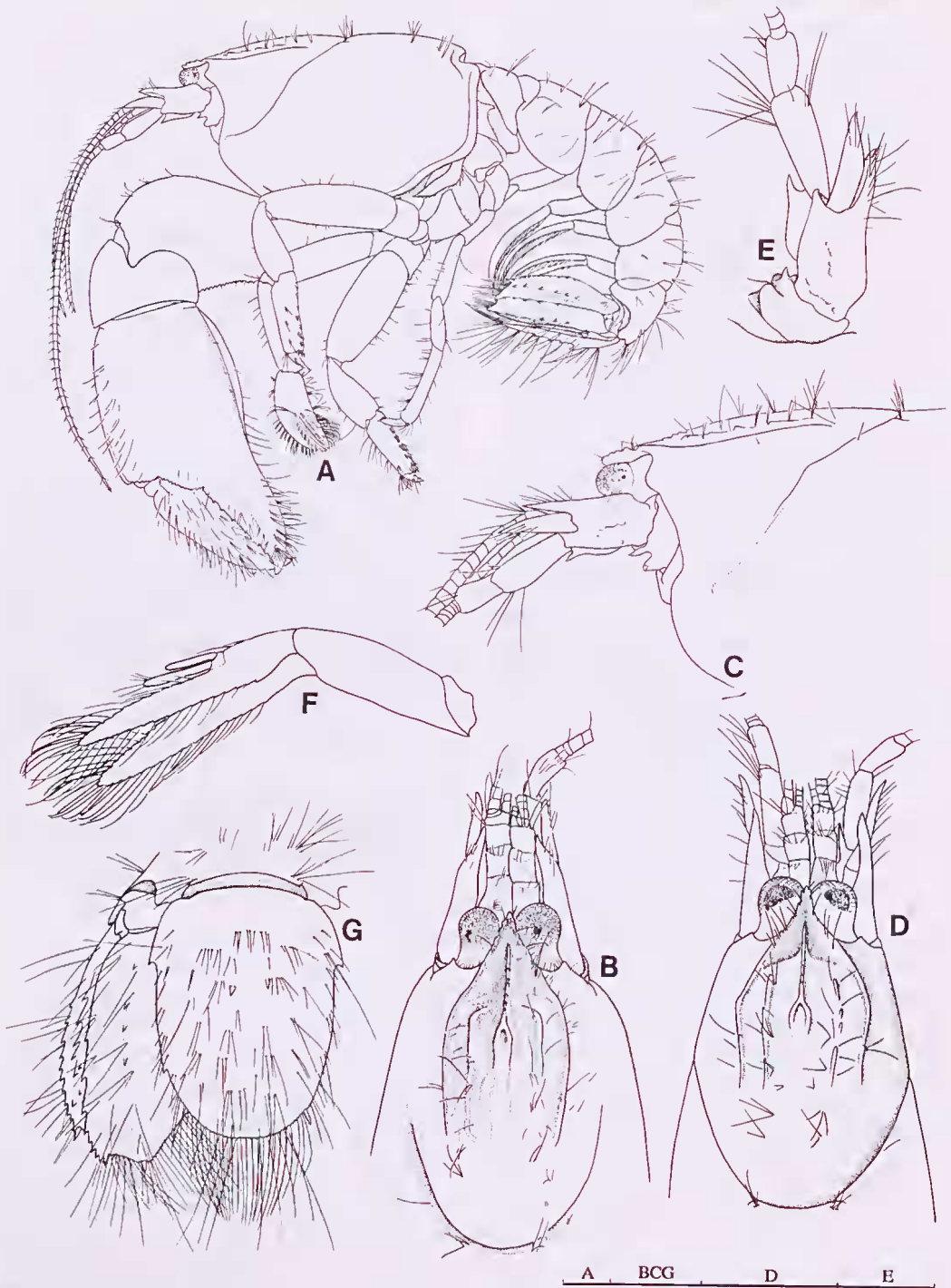


Fig. 4. *Platyaxius brevirostris* sp. nov.: A, whole body, lateral aspect; B, dorsomedian region, dorsal aspect; C, dorsomedian region, lateral aspect; D, dorsomedian region, dorsal aspect; E, antennal peduncle, lateral aspect; F, pleopod 2 in male, posterior aspect; G, tail-fan, dorsal aspect. A-C, E-G, male, holotype, NTM Cr.000784a; D, female, paratype, NTM Cr.000784b. Scale in 1 mm divisions.

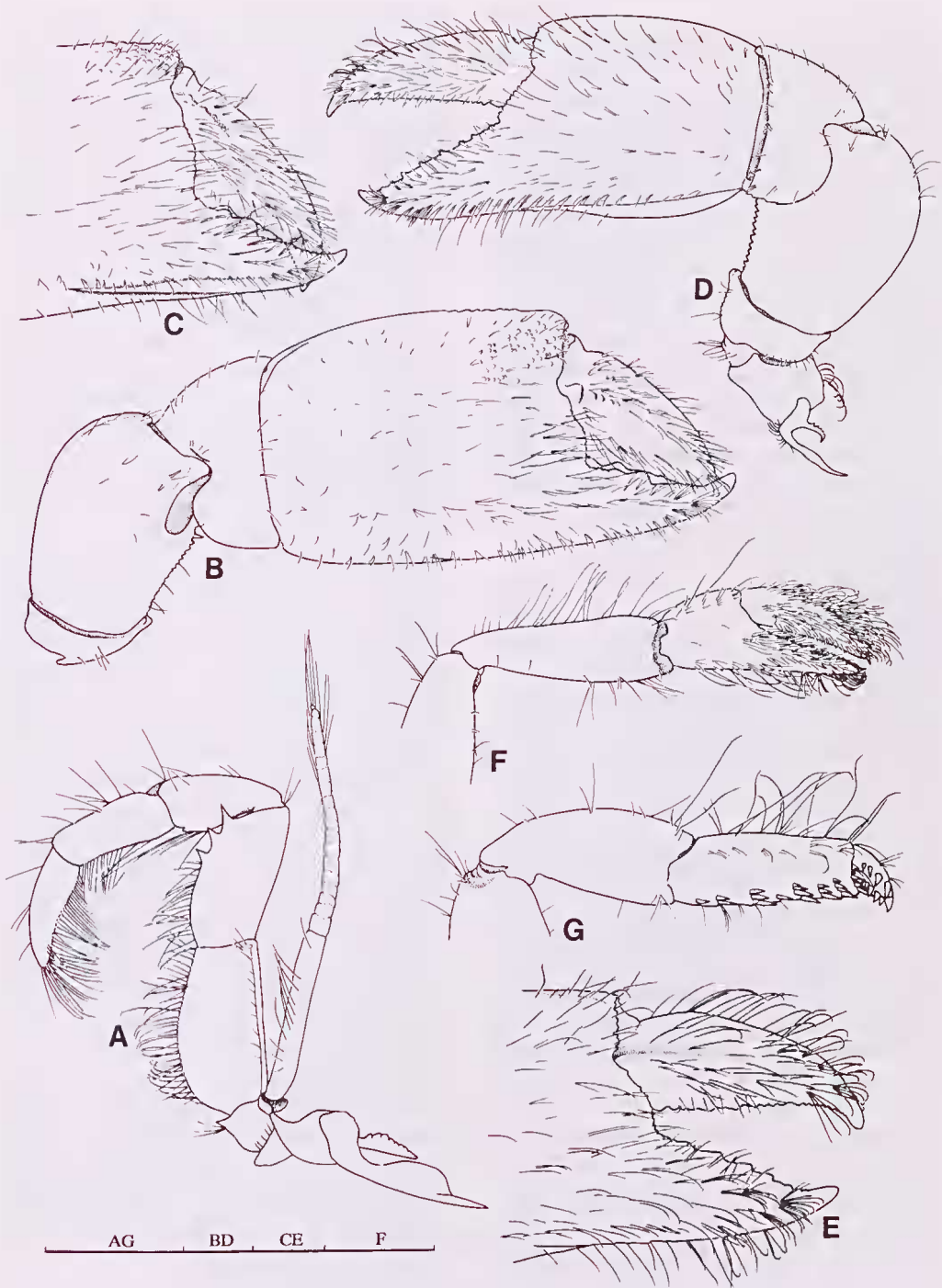


Fig. 5. *Platyaxius brevirostris* sp. nov.: A, maxilliped 3, lateral aspect; B, pereopod 1, lateral aspect; C, distal part of chela in larger pereopod 1, lateral aspect; D, pereopod 1, lateral aspect; E, distal part of chela in pereopod 1 in female, lateral aspect; F, carpus and chela in pereopod 2, lateral aspect; G, carpus, propod and dactyl in pereopod 3, lateral aspect. A-D, F-G, male, holotype, NTM Cr.000784a; E, female, paratype, NTM Cr.000784b. Scale in 1 mm divisions.

rolateral tooth on left side, and a movable posterolateral tooth on right, posterior margin rounded without median tooth.

Eye thick, subglobose, slightly longer than rostrum; cornea poorly pigmented. Antennular peduncle reaching to middle of antennal segment 4; segment 1 as long as segments 2 and 3 combined. Antennal segment 1 (Fig. 4E) with sharp tooth on distoventral margin; antennal segment 2 with an elongate distodorsal tooth, extending to about middle of segment 4; scaphocerite distinct, reaching to near end of antennal segment 4; segment 5 about half times as long as segment 4. Maxilliped 3 (Fig. 5A) with sharp medial tooth on basis; ischium unarmed on medial margin, finely denticulate cristadentata incurved proximally; merus shorter than ischium, with three prominent medial teeth; carpus slightly shorter than merus, with distomedial tooth; propod subequal to carpus, and equal to dactyl.

Pereopods 1 subequal. Larger pereopod 1 on right side (Fig. 5B) with coxa flat medially, carinate on posteromedial margin, unarmed; basis unarmed; ischium carinate ventrally with distal protuberance; merus about 1.3 times longer than broad, broadly rounded with carina on dorsal margin, and straight with fine denticles on ventral margin; carpus about half length of merus, 0.66 times as long as broad, carinate on dorsal margin; chela 1.8 times as long as broad, sparsely setose laterally; palm about 1.2 times as long as broad, carinate dorsally, and also carinate ventrolaterally in distal half; fixed finger with two obtuse teeth in proximal half of cutting edge; dactyl (Fig. 5C) 0.8 times as long as palm, with two obtuse teeth proximally on cutting edge, proximal tooth more conspicuous than distal one. Smaller pereopod 1 (Fig. 5D) on left side similar to but less broad than right one; ischium also finely denticulate on ventral margin; merus about 1.3 times as long as broad; carpus about half length of merus; chela 2.3 times as long as broad, sparsely setose laterally, carinate dorsally and ventrolaterally; cutting edge of fixed finger with seven well-spaced denticles; dactyl slightly longer than palm, cutting edge with row of small granules. Pereopod 2 with coxa flat medially, smoothly carinate on posteromedial margin; basis and ischium unarmed; merus about three times as long as broad, unarmed; carpus 0.7 of length of merus, unarmed; chela (Fig. 5F) subequal to carpus, fingers setose laterally, dactyl 1.4 times length of palm. Pereopod 3 with coxa bearing distal tooth

on left posteromedial margin, unarmed on right; basis and ischium unarmed; merus broad, 2.5 times as long as broad; carpus 0.7 of length of merus; propod (Fig. 5G) subequal to carpus, furnished with eight transverse rows of one to three transparent spines on ventrolateral surface; dactyl short, with row of four lateral and five ventral spines, terminating in transparent spine at tip. Pereopod 4 similar to pereopod 3 in shape; coxa with two ventral teeth, one at midlength, one at distal end; basis and ischium unarmed; merus unarmed, 2.8 times as long as broad; carpus more than 0.6 of length of merus; propod subequal to carpus, with seven transverse rows of one to two transparent spines on ventrolateral surface; dactyl short, with row of spines on lateral surface and another on ventral margin, ending in transparent spine at tip. Pereopod 5 with coxa, basis and ischium unarmed; merus 1.8 times length of ischium; carpus 0.8 of length of merus; propod 1.4 times length of carpus; dactyl 0.3 of length of propod.

Pleopod 1 absent in male. Pleopod 2 biramous, endopod and exopod narrow, leafy; endopod with free appendices masculinae and internae (Fig. 4F), both slender, similar in shape. Pleopods 3-5 similar to pleopod 2 in shape, endopods with appendices internae. Uropodal exopod truncate distally, lateral margin with 13 lateral teeth, and movable tooth at distolateral angle; dorsal surface with two longitudinal carinae, with six teeth on lateral longitudinal carina; smooth on median carina, terminated by a distal marginal tooth. Uropodal endopod longer than telson, with four interspaced median teeth, nine lateral teeth, serrate semicircular distolateral projection, and posterior margin straight with an articulating distomedial tooth.

Paratype. Female very similar to male. Dorsomedian region of carapace with submedian carina (Fig. 4D) discontinuous in two or three places. Right, larger pereopod 1 with fingers (Fig. 5E) irregularly denticulate on cutting edge. Pleopod 1 uniramous, biarticulate, consisting of proximal segment and multiarticulate flagellum. Pleopods 2-5 biramous, endopods with appendices internae.

Etymology. The specific name is derived from the Latin "*brevis*", short, and "*rostrum*", snout, referring to the short triangular rostrum, which is characteristic of this species.

Remarks. *Platyaxius brevirostris* sp. nov. is similar to species of *Eiconaxius* in the characters of the prominent scaphocerite, the broadened merus of the first pereopods, and the tail-

fan. However, it differs from *Eiconaxius*, because in *Platyaxius brevirostris* the rostrum is triangular, the submedian carina of carapace is present, the cervical groove is present, the propodi of pereopods 3-4 are armed with transverse rows of spines laterally, and the dactyli of the pereopods are short.

Distribution. North-West shelf, Western Australia.

Genus *Eutrichocheles* Wood-Mason

Eutrichocheles Wood-Mason, 1876: 264.

Eutrichocheles - Sakai and de Saint Laurent, 1989: 51.

Definition. Dorsomedian region of carapace convex anteriorly, dorsal platform with lateral, submedian, and median carinae; anterolateral margin usually armed with a tooth. Rostrum triangular, pointed at tip, continuous laterally with lateral carina of carapace. Telson subsquare, with pair of oblique carinae on dorsal surface. Eye subglobose or cylindrical, cornea pigmented. Antennal segment 2 with short distodorsal tooth, scaphocerite also short, bifurcate distally. Pereopods 1 subequal. Pereopod 3 with propod bearing transverse rows of spines laterally. No pleurobranchs. Uropodal exopod with transverse suture.

Type species. *Cancer modestus* Herbst, 1890, designated by Wood Mason, 1876: 264.

Remarks. Two new species, *Eutrichocheles austrinus* sp. nov. and *E. pumilus* sp. nov. are added as members of the genus *Eutrichocheles*.

With regard to the characters of the pleopods, the genus *Eutrichocheles* was defined by Sakai and de Saint Laurent (1989: 51) as "Pleopod 1 in males absent, and in females of basal segment and multiarticulate flagellum. Pleopod 2 in males is provided with an appendix interna, but without an appendix masculina, and pleopods 3-5 with appendices internae; pleopods 2-5 in females with appendices internae". However, the present specimens of *E. brocki*, *E. austrinus* sp. nov. and *E. pumilus* vary from previously described forms as follows. Pleopod 1 in the male is absent in *E. pumilus*, and it is unknown in *E. austrinus* sp. nov.; pleopod 1 in the female is absent in *E. austrinus* sp. nov. and *E. brocki*, while it is uniramous and biarticulate in *E. pumilus*. Pleopod 2 in the male has an appendix masculina, but no appendix interna in *E. pumilus*, and it is unknown in *E. austrinus* sp. nov. and *E. brocki*. Pleopod 2 in the female lacks appendix interna in *E. austrinus* sp. nov., *E. pumilus* and *E. brocki*.

Pleopods 3-5 in the male lack appendices internae in *E. pumilus*, however they are unknown in *E. austrinus* sp. nov. and *E. brocki*; pleopods 3-5 in the female lack appendices internae in *E. austrinus* sp. nov., *E. pumilus* and *E. brocki*.

The status of the pleopods in the type species, *E. modestus*, was not mentioned by Herbst (1794: 173), Wood-Mason (1876: 264) and Chopra (1933: 277), however, in the two males of *E. biserratus* from Malacca and Singapore (De Man 1925a: 138) and the female of *E. brocki* from Amboina and the *Siboga-St.* 131 (De Man 1925b: 102, 109), pleopods 2-5 are devoid of the appendices internae, but with the appendix masculina.

Poore and Griffin (1979: 228, Fig. 3) described *E. brocki* as the female having pleopods 1 uniramous, consisting of a proximal segment and a multiarticulate flagellum, and the male having a single small ovate segment with a minute terminal hook. The characteristics of the pleopods in *Eutrichocheles* should be revised.

Eutrichocheles brocki (De Man, 1888)

Axiu Brocki De Man, 1888: 475, pl. 20, fig. 3. *Axiopsis* (*Paraxiopsis*) *Brocki* - De Man, 1925b: 71, 101, pl. 8, fig. 19f.

Axiopsis (*Paraxiopsis*) *brocki* - Poore and Griffin, 1979: 228, fig. 3; Sakai, 1987: 304.

Eutrichocheles brocki - Sakai and de Saint Laurent, 1989: 52.

Material. NTM Cr.005252, one female, TL 12.3, CL 4.2, Ashmore Reef, Timor Sea, 15 April 1987, coll. J.R. Hanley.

Type locality. Ambon, Indonesia.

Distribution. Reefs, to 83 m deep. Northern and western Australia; Timor Sea; Indonesia; Borneo (De Man 1925b); Okinawa, Japan (Sakai 1987).

Eutrichocheles austrinus sp. nov. (Figs 6-7)

Type Material. HOLOTYPE - one female, NTM Cr.000842, TL 20.0, CL 7.0 including rostrum, Darwin, NT, 31 January 1983, coll. A.J. Bruce. PARATYPE - one female, NTM Cr.000799, TL 14, CL 4.7, East Point, Darwin NT, intertidal reef, 1 January 1983, coll. A.J. Bruce.

Diagnosis. Dorsomedian region of carapace bordered by lateral carina with two to three teeth, submedian carina with row of five teeth, and median carina with middle protuberance.

Rostrum triangular, acuminate at tip, with three lateral teeth proximally. Posterior thoracic region with median carina in posterior 0.7 of carapace. Scaphocerite double-spinulate distally. Maxilliped 3 with ischium bearing three medial teeth, and merus with seven medial teeth. Pereopod 1 subequal. Pleopod 1 in female absent, pleopods 2-5 without appendices internac.

Description of female holotype. Carapace (Fig. 6) sparsely setose. Dorsomedian region of carapace convex posterior to rostrum; lateral carina with three distinct teeth, the posteriormost small, set apart from penultimate tooth; submedian row not carinate but with five interspaced teeth; median carina smooth, with central protuberance, extending backward to cervical groove; anterolateral margin with sharp denticle. Rostrum (Fig. 7A) triangular, acuminate, with two to three lateral teeth proximally, continuous laterally with lateral carina of carapace. Cervical groove distinct. Posterior thoracic region with median carina in posterior 0.7 times length of carapace. Thoracic sternite attached to pereopod 4 (Fig. 7B) with transverse carina, median slit deep. Relative lengths of abdominal somites 1-6 1.3; 1.3; 1.3; 1.4; 1.7 and 2.0. Pleuron 1 (Fig. 6) narrow, unarmed ventrally; pleuron 2 broadened, rounded anteriorly; pleura 3-5 truncate posteriorly, each with denticle at anteroventral angle; pleuron 6 triangular with apical denticle. Telson (Fig. 7C) 1.2 times as long as broad, with three to four medial teeth in paired diagonal lines; lateral margins expanded

with tooth at proximal 0.4 of length, and posterior to it, two teeth at 0.7 and 0.8 of length, a movable tooth at posterolateral angle, posterior margin rounded, with median tooth.

Eye cylindrical, shorter than rostrum; cornea pigmented. Antennular peduncle shorter than distal end of antennal penultimate segment; segment 1 longer than segments 2 and 3 combined; segments 2 and 3 short, subequal. Antennal segment 1 (Fig. 7D) with two teeth distoventrally; segment 2 with short distodorsal tooth, scaphocerite bifurcate distally; segment 3 with distoventral tooth on left side, unarmed on right; segment 4 longer than segment 2, and shorter than segment 5. Maxilliped 3 with coxa bearing sharp distal tooth on posteromedial margin; basis with small distal tooth on medial surface; ischium with three medial teeth (Fig. 7E), crista dentata with nine triangular teeth; merus with seven medial teeth, gradually increasing distally in size; carpus shorter than merus, with large distomedial tooth; propod as long as carpus and longer than dactyl.

Pereopod 1 slender, subequal. Coxa with two small distal teeth on medial margin, and one sharp tooth proximally on posteromedial carina. Left pereopod 1 with ischium (Fig. 7F) bearing three ventral teeth; merus about three times as long as broad, with four distinct ventral and two dorsal teeth; carpus 0.4 of length of merus, unarmed; chela about four times as long as carpus, palm more than twice as long as broad, and with distodorsal tooth, chela serrate on



Fig. 6. *Eutrichocheles austrinus* sp. nov., female, holotype, NTM Cr.000842. Scale in 1 mm division.

cutting edges, fingers missing at tips. Right pereopod 1 (Fig. 7G) more slender than left one, chela serrate on cutting edge, fixed finger incurved distally, and dactyl broken at tip. Pereopod 2 with coxa bearing a distal tooth on both anteromedial and posteromedial margins; ischium with four to five ventral teeth; merus with three triangular ventral teeth, and unarmed

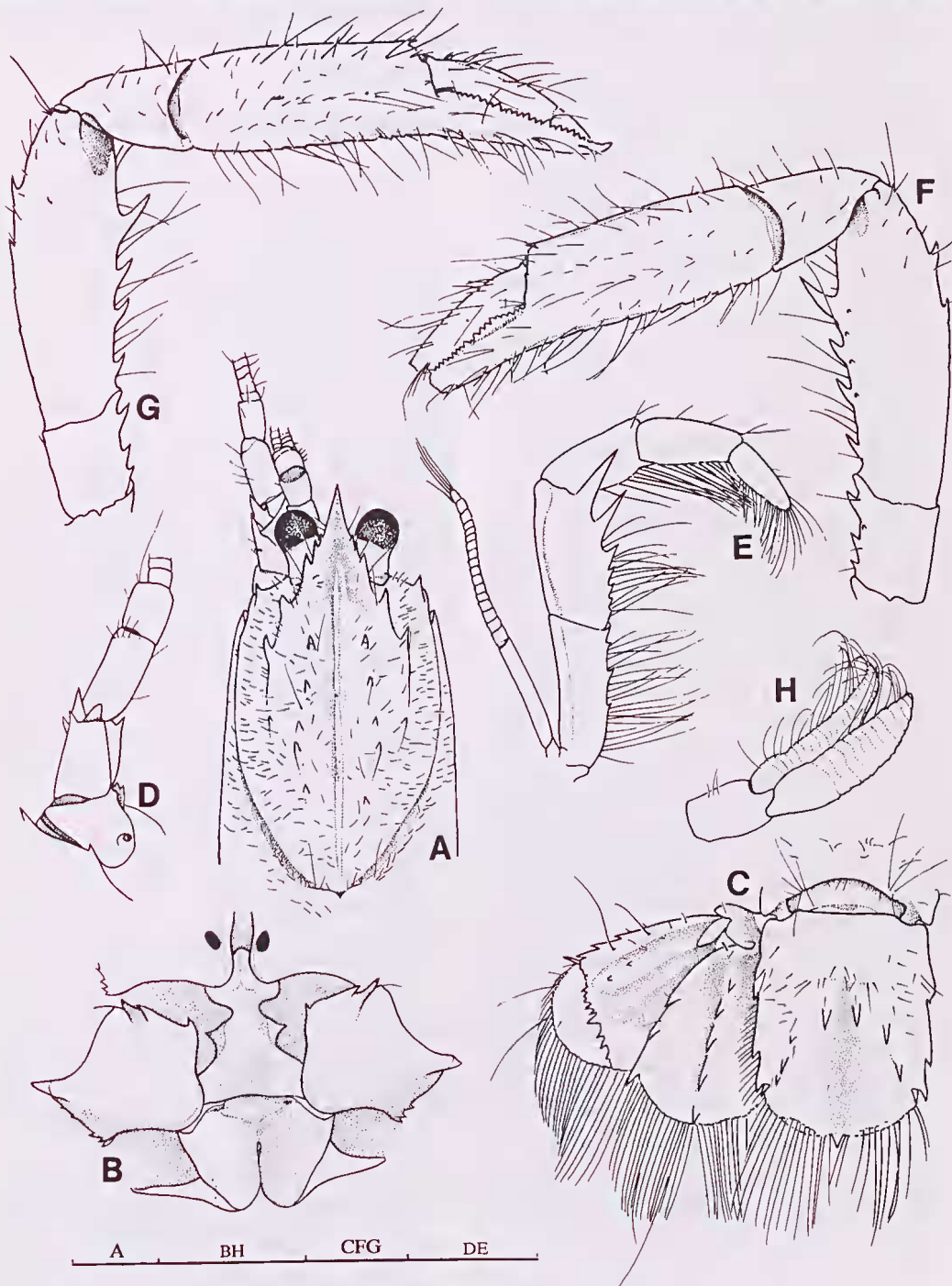


Fig. 7. *Eutrichocheles austrinus* sp. nov. f, holotype, NTM Cr.000842: A, dorsomedian region, dorsal surface; B, thoracic sternites 3-4, ventral aspect; C, tail-fan, dorsal aspect; D, antennal peduncle, lateral aspect; E, maxilliped 3, lateral aspect; F, larger pereopod 1, lateral aspect; G, smaller pereopod 1, lateral aspect; H, pleopod 2, anterior aspect. Scale in 1 mm divisions.

dorsally; carpus half times as long as merus, unarmed; chela 1.3 times as long as carpus, dactyl shorter than palm, unarmed on cutting edge, and fixed finger evenly serrate on cutting edge. Pereopod 3 simple, coxa with distal tooth on anteromedial margin; genital pore present on medial surface; basis and ischium unarmed; merus elongate, with distinct distoventral tooth; carpus 0.4 of length of merus, unarmed; propod 1.5 times as long as carpus, with nine transverse rows of transparent spines on ventrolateral surface, third and fourth proximal rows represented by single spine, other rows with two spines; dactyl half times as long as propod, with two lateral, and seven well-spaced ventral spines, and strong transparent spine at tip. Pereopod 4 simple, coxa with distal teeth on anteromedial margin; ischium and merus unarmed; carpus about 0.4 of length of merus, unarmed; propod twice as long as carpus, with eight lateral teeth along midline, and with nine transverse rows consisting of one to three transparent spines on ventrolateral surface; dactyl about half times as long as propod, with six lateral, and seven interspaced ventral spines, and distinct transparent spine at tip. Pereopod 5 with coxa, basis and ischium unarmed; merus 2.5 times as long as ischium; carpus 0.7 of length of merus; propod 1.8 times length of carpus, setose distally on lateral surface, and with nine transverse rows of transparent spines ventrally; dactyl 0.3 of length of propod.

Pleopod 1 absent. Pleopods 2-5 (Fig. 7H) without appendices internae. Uropodal exopod rounded on distal margin, with three lateral teeth distally, and an articulated tooth at distolateral angle; dorsal surface with two longitudinal carinae; medial carina smooth, and lateral carina with two teeth posteriorly; transverse denticulate suture present. Uropodal endopod subequal to telson, with three lateral teeth including distal one at distolateral angle; dorsal surface carinate with row of five teeth medially.

Etymology. The species name *austrinus* means "from the south", referring to Australia where the species was found.

Remarks. In the female paratype, antennal segment 3 has a distoventral tooth on both sides, however the female holotype shows individual variation, as the tooth is found only on the left side.

This species closely resembles *E. brocki* (De Man, 1888) in the shape of the rostrum, the antennular and antennal peduncles, and the tail-

fan, but differs in that the submedian carina on the dorsomedian region of carapace bears a row of five teeth; the merus of maxilliped 3 has seven medial teeth, while in *E. brocki* the submedian carina on the dorsomedian region is unarmed; and the merus of maxilliped 3 has only two medial teeth.

Eutrichocheles pumilus sp. nov.

(Figs 8-9)

Material. HOLOTYPE - one female, NTM Cr.004557, TL 17.0, CL 6.0, Port Essington, Cobourg Peninsula, NT, St. CPV/8, 11°21.5'S 132° 13'E, 18 September 1985, coll. J.R. Hanley. NTM Cr.000792, one male, TL 11.5, CL 4.2 including rostrum, 27 m, in sponge, coll. H.K. Larson, R.V. Anson, Stn. HL 81-29, trawl. NTM CL 007162, one male, damaged, TL 21.5, Cr.7.5 including rostrum, 19° 30.7'S 118° 49.1'E, 39-40 m, 26 June 1983, coll. A.J. Bruce.

Diagnosis. Dorsomedian region of carapace convex anteriorly; lateral carina with two strong teeth anteriorly, briefly extending backward to anterior third of length; submedian carina slightly developed or absent; median carina running from base of rostrum to anterior quarter of length, with tubercle at midlength. Rostrum triangular, sulcate dorsally, acuminate at tip. Telson longer than wide, without median tooth on posterior margin. Maxilliped 3 with merus bearing 13-14 medial teeth, increasing in size distally. Pereopod 1 subequal. Pleopod 1 in male absent, in female uniramous. Pleopods 2-5 in male and female without appendices internae, but in male with appendices masculinae.

Description of female holotype. Carapace naked. Dorsomedian region of carapace convex posterior to rostrum anteriorly; lateral carina distinct in anterior third of length, bearing one to two sharp teeth anteriorly, one tooth on left side, and two on right; submedian carinae slightly raised; median carina extending over anterior quarter of length, with tubercle at midlength; anterolateral margin with tooth. Rostrum (Fig. 8D) triangular, sulcate dorsally, acuminate at tip, with small lateral tooth at midlength, continuous laterally with lateral carina of carapace. Cervical groove distinct at posterior 0.6 of length of carapace. Posterior thoracic region slightly convex along middorsal line. Relative lengths of abdominal somites 1-6 and telson 1; 1.3; 1.3; 1.3; 1.3; 1.5 and 2.0. Pleuron 1 narrow, deflexed posteroventrally, with apical tooth; pleura 2-6

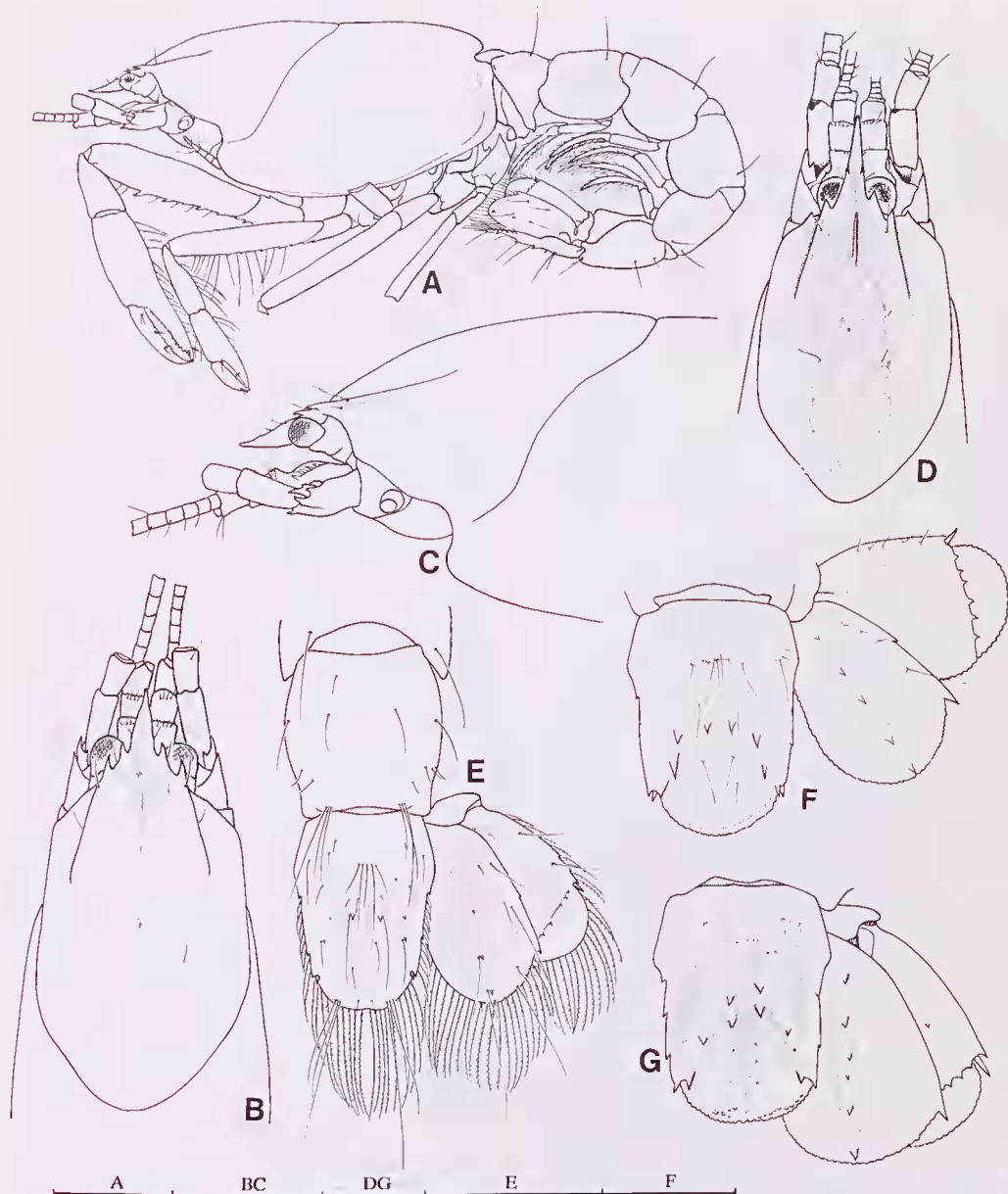


Fig. 8. *Eutrichocheles pumilus* sp. nov.: A, whole body, lateral aspect; B, dorsomedian region, dorsal aspect; C, dorsomedian region, lateral aspect; D, dorsomedian region, dorsal aspect; E, sixth abdominal somite and tail-fan, dorsal aspect; F-G, tail-fan, dorsal aspect. A-C, E, young male, NTM Cr.000792; D, F, female, holotype, NTM Cr.004557; G, male, NTM Cr.007162. Scale in 1 mm divisions.

convex ventrally, unarmed. Telson (Fig. 8F) longer than wide, with medial transverse line of setae at proximal 0.3 times length, and, posterior to line of setae, largely sulcate medially, with three teeth on paired diagonal line; lateral margins expanded without proximal tooth at proximal 0.3 of length, and posterior to it with

tooth at proximal 0.4 of length on left side, and 0.6 of length on right side, and other two transverse teeth at posterolateral angle; posterior margin convex, without median tooth.

Eye subglobose, reaching to proximal 0.3 times length of rostrum; cornea brown in alcohol. Antennular peduncle reaching slightly be-

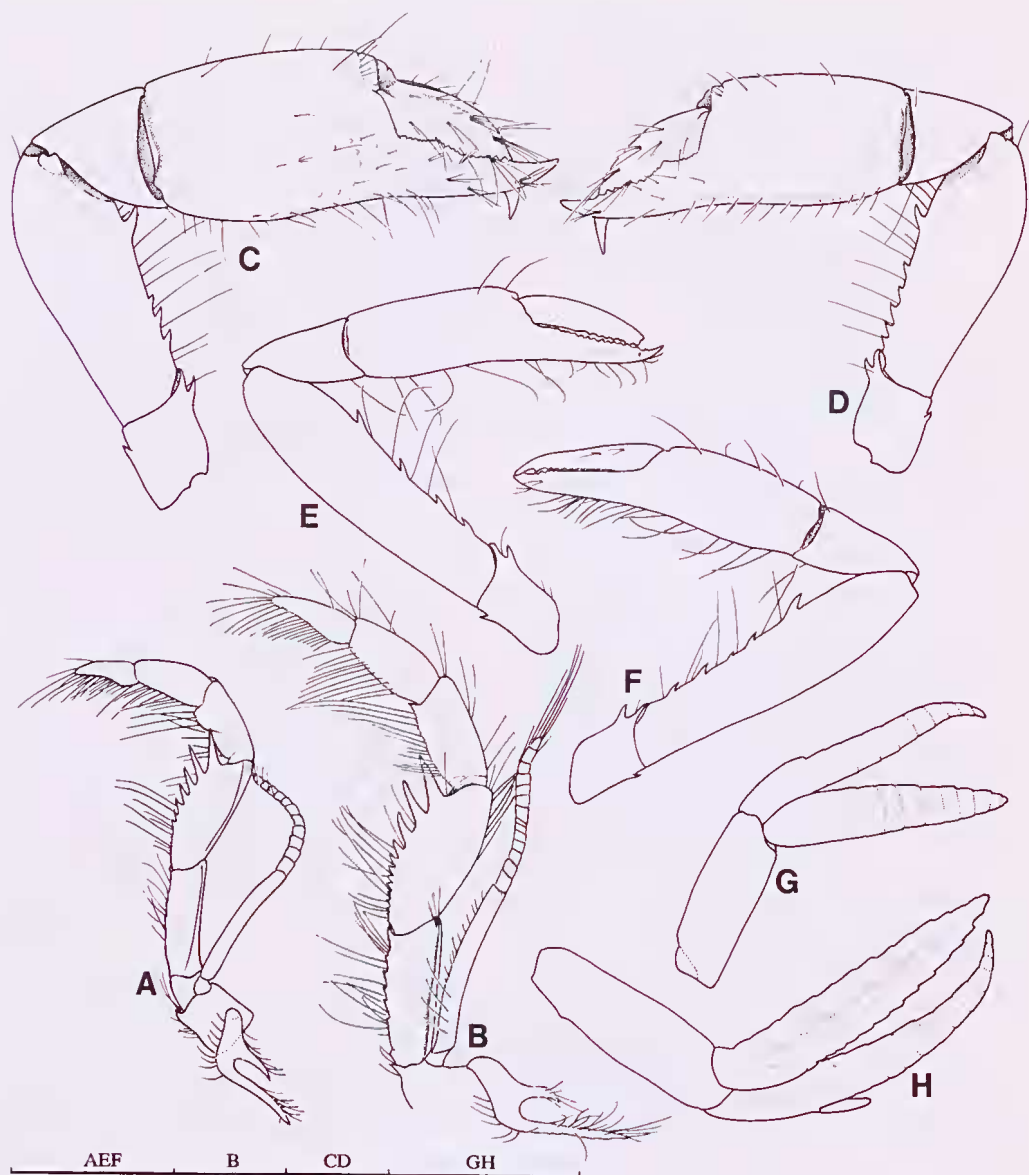


Fig. 9. *Eutrichocheles pumilus* sp. nov.: A-B, maxillipeds 3, lateral aspect; C-F, pereopod 1, lateral aspect; G, pleopod 2 in female, anterior aspect; H, pleopod 2 in male, anterior aspect; A, E-F, young male, NTM Cr.000792; B, H, male, NTM Cr.007162; C-D, G, female, holotype, NTM Cr.004557. Scale in 1 mm divisions.

yond antennal segment 4, segment 1 expanded proximally on lateral margin; segments 2 and 3 short, subequal. Antennal segment 1 unarmed; segment 2 with short distodorsal tooth; scaphocerite short, bifurcate distally with small medial tooth; segment 3 with short distal tooth; segment 4 subequal to segment 2, and 0.7 of length of segment 5. Maxilliped 3 with coxa bearing sharp distal tooth on posteromedial

margin; epipod with podobranch but without gill-branches; basis with distal medial tooth; ischium with five medial teeth, crista dentata with 15-16 teeth; merus (Fig. 9B) subequal to ischium, with 13-14 medial teeth increasing in size distally, four distal teeth prominent; carpus with distomedial tooth; propod longer than dactyl; exopod longer than merus, consisting of proximal segment and jointed flagellum.

Pereopod 1 subequal. Coxa carinate in proximal half on posteromedial margin, and with tooth at its distal angle, and distal to it deflected to two poorly defined carinae, posterior carina with blunt tubercle, but anterior one unarmed; basis unarmed; ischium with subterminal tooth on both dorsal and ventral margins. Right larger pereopod 1 with merus (Fig. 9C) about 2.5 times as long as broad, with four teeth on ventral margin, unarmed on dorsal margin; carpus 0.4 of length of merus, unarmed; chela 3.5 times length of carpus, 2.3 times as long as broad; palm 1.3 times as long as broad; fixed finger with low triangular cusp proximally on serrate cutting edge; dactyl narrow, less than palm in length, serrate on cutting edge, tip incurved distally. Left, smaller pereopod 1 with merus (Fig. 9D) slightly more slender than that of right side, with six ventral teeth; carpus and chela similar to those on right, but more slender. Pereopod 2 missing, coxa with distal tooth on posterior margin, basis unarmed. Pereopod 3 present on right side, missing on left side. Coxa, basis and ischium unarmed; merus slender, reaching to middle of merus of pereopod 1; carpus less than half length of merus, unarmed; propod 1.2 times length of carpus, with five well spaced teeth with setae on ventrolateral margin, and distinct tooth at distoventral angle; dactyl 0.4 of length of propod. Pereopod 4 present on left side, missing on right side. Coxa, basis, ischium and merus unarmed; carpus half length of merus, unarmed; propod 1.2 times length of carpus, with median row of five small spines on lateral surface, seven spines on ventrolateral surface, third distal spine with additional lateral spine, slender spine at distoventral angle, and thick setae subterminally on medial surface; dactyl half as long as propod. Pereopod 5 unarmed; carpus less than half length of merus; propod 1.5 times as long as carpus, with tuft of setae on lateral surface; dactyl about half length of propod.

Pleopod 1 two-segmented, setose distally. Pleopods 2-5 biramous, without appendices internae. Uropod with protopod unarmed (Fig. 8F). Uropodal exopod rounded on distal margin, with fixed distolateral tooth at distal angle, beside it a movable tooth, and six teeth on transverse suture. Uropodal endopod oval distally; with lateral tooth medially and distally, and five to six teeth on median carina.

Description of young male. This specimen differs from the larger female type specimen in following characters.

Dorsomedian region of carapace with two sharp teeth on lateral carina anteriorly (Fig. 8B), unarmed on anterolateral margin (Fig. 8C). Antennular peduncle reaching to near distal end of antennal peduncle. Telson (Fig. 8E) longer than wide, with pair of three teeth medially; lateral margins expanded with tooth in proximal 0.4 of length, posterior to it with tooth at distal 0.3 of length on left side, tooth at distal 0.4 of length on right side, and one movable tooth at posterolateral angle.

Pereopod 1 subequal. Right larger pereopod 1 with ischium (Fig. 9E) with tooth on ventral and dorsal margins; merus 3.8 times as long as broad, with four ventral teeth; carpus about 0.3 of length of merus; chela 2.8 times length of carpus, about four times as long as broad; palm 2.2 times as long as broad; fixed finger less than palm in length, serrate on cutting edge, and slightly incurved distally; dactyl serrate on cutting edge, broken at tip. Left smaller pereopod 1 with ischium (Fig. 9F) bearing tooth on both ventral and dorsal margins; merus 4.2 times as long as broad, with five ventral teeth; carpus 0.33 of length of merus, slightly longer than that on right side; chela 2.8 times as long as carpus, about four times as long as broad; palm 2.2 times as long as broad; dactyl about 0.8 of length of palm; fingers serrate on cutting edges.

Pleopod 1 absent. Pleopod 2 with appendix masculina bearing apical setae, but without appendix interna. Pleopods 3-5 without appendices internae.

Etymology. The species name is derived from the Latin "*pumilus*", small, referring to the small size of the animal.

Remarks. The female specimen is designated as the holotype; one of two males is young, and the other larger male is damaged, lacking pereopod 1.

In the female holotype, the antennal tooth on the anterolateral margin of the carapace is present, and the submedian carina of the carapace is weakly developed, but in the other male specimens the antennal tooth and the submedian carina are absent.

The young male differs from the larger male and female in that the telson and the uropod are more slender, and the medial meral teeth of maxilliped 3 are reduced in number (Fig. 9A).

This species is similar to *E. brocki* in the shape of the rostrum, antennule, antenna, and the telson. However, it differs distinctly from *E. brocki*, because in *E. pumilus* the submedian

carina on the dorsomedian region of the carapace is weak or absent; maxilliped 3 has 13-14 medial meral teeth, and the telson lacks a posteromedian tooth. In *E. brocki* the submedian carina is conspicuous; maxilliped 3 is armed with two medial meral teeth; and the telson has a posteromedian tooth.

Genus *Calaxius* Sakai and de Saint Laurent

Calaxius Sakai and de Saint Laurent, 1989: 84.

Definition. Rostrum narrowly triangular. Dorsomedian region of carapace slightly convex anteriorly. Posterior thoracic region dorsally carinate posteriorly or for whole length. Abdominal pleura 1-5 triangular or sharply pointed ventrally. Telson oblong, without posteromedian tooth. Eye cylindrical, cornea pigmented. Antennal segment 2 with prominent distodorsal tooth, and scaphocerite also prominent. Pereopod 1 unequal, fingers of smaller cheliped longer than palm. Pleurobranchs present. Pleopod 1 in male absent, in female biarticulate, distal segment multiarticulate. Pleopods 2-5 slender, with appendices internae; pleopod 2 in male with appendix masculina. Uropodal exopod with transverse suture.

Type species. *Calaxius acutirostris* Sakai and de Saint Laurent, 1989, by original designation.

Remarks. The type species of the genus *Calaxius*, *C. acutirostris*, is the first record from the Australian waters.

Calaxius acutirostris Sakai and de Saint Laurent (Fig.10)

Calaxius acutirostris Sakai and de Saint Laurent, 1989: 86, figs 23-25.

Material. NTM Cr.0007158, one male, TL 65.0, CL 26.5 including rostrum, 22°55.1'S 153°00.5'E, 338-325 m, 18 September 1985, coll. A.J. Bruce, FRV *Soela*, St. 12. NTM Cr.004234, one male, TL 56.0, CL 22.2, 16°45.3'S 119°46.4'E, 502-504 m, 5 February 1984, coll. A.J. Bruce, FRV *Soela*, St. 0184.66, trawl.

Diagnosis. Scaphognathite of maxilla 2 (Fig. 10A) bearing elongate posterior seta. Maxilliped 1 (Fig. 10B) with endopod biarticulate, exopod with distal setose process. Maxilliped 2 (Fig. 10C) with unbranched arthrobranch, podobranch with rudimentary epipod. Maxilliped 3 (Fig. 10D) with ischium bearing two medial teeth, merus with two medial teeth.

Remarks. The male specimens from north-eastern Australia described above agree with the type specimens from the Malagasy Republic in morphological features. This species is recorded for the first time in Australian waters.

Type locality. Malagasy Republic.

Distribution. 219-400 m deep. Malagasy Republic; north-eastern Australia; Philippines.

Genus *Acanthaxius* Sakai and de Saint Laurent

Acanthaxius Sakai and de Saint Laurent, 1989: 66.

Definition. Gonochoristic. Rostrum narrowly triangular, pointed at tip, discontinuous laterally with lateral carina of carapace. Dorsomedian region of carapace confluent with rostrum or slightly convex posterior to rostrum; with or without antennal tooth on anterolateral margin. Abdominal pleura 2-5 rounded ventrally. Telson subsquare, or clearly longer than wide. Eye cylindrical, and with double corneae. Antennal segment 2 with distinct distodorsal tooth, and scaphocerite also well developed, with or without medial tooth proximally. Pereopod 1 unequal, fingers of small cheliped slender, strikingly longer than palm. Pereopod 3 with propod bearing transverse rows of spines on ventrolateral surface. No pleurobranch. Pleopod 1 in male absent or biarticulate, and in female biarticulate, distal segment multiarticulate. Pleopods 2-5 in both male and female with appendices internae, and pleopod 2 in male with appendix masculina. Uropodal exopod with transverse suture.

Type species. *Axiopsis (Axiopsis) pilocheira* Sakai, 1987, designated by Sakai and de Saint Laurent, 1989: 66.

Remarks. The antennal tooth on the anterolateral margin of carapace is added to the definition of the genus *Acanthaxius*; the type species, *Acanthaxius pilocheira* (Sakai, 1987), *A. polyacanthus* (Miyake and Sakai, 1967), and *A. amakusana* (Miyake and Sakai, 1967) have no antennal tooth. However, it is present in *A. polychaetes* sp. nov., *A. hirsutimanus* (Boesch and Smalley, 1972) and *A. caespitosa* (Squires, 1979).

The character of pleopod 1 in the male is variable; in *A. pilocheira*, and *A. miyazakiensis* pleopod 1 is absent in the male, and in *A. polychaetes* and *A. hirsutimana* it is a biarticulate rod.

The species of *Acanthaxius*, *A. polychaetes* sp. nov. is first recorded from Australian waters.

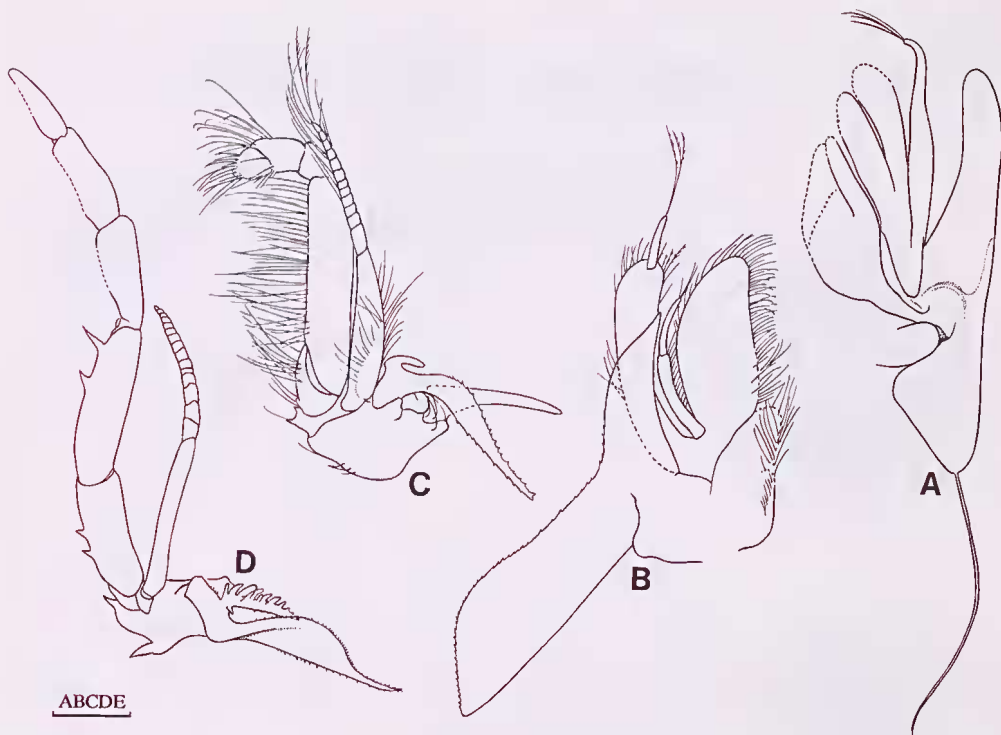


Fig. 10. *Calaxius acutirostris* Sakai and de Saint Laurent, male, NTM Cr.007158: A, maxilla 2, lateral aspect; B, maxilliped 1, medial aspect; C, maxilliped 2, lateral aspect; D, maxilliped 3, lateral aspect. Scale in 1 mm divisions.

Acanthaxius polychaetes sp. nov.
(Figs 11-13)

Type Material. HOLOTYPE - one male, NTM Cr.007156, TL 76, CL 30 including rostrum, R 4.2, 17°57.5'S 147°03.5'E, 259-260 m, 19 January 1986, coll. FRV *Soela*.

Diagnosis. Body setose. Posterior thoracic region with distinct median carina. Eye cylindrical, with double cornea. Scaphognathite distinct, directed laterally beyond distodorsal tooth of antennal segment 2, and with small medial tooth proximally. Pereopod 1 asymmetric, chelae slanting, covered with thick setae on lateral surface; palm of larger pereopod 1 unarmed on dorsal margin, that of smaller pereopod 1 with three teeth. Pleopod 1 in male biarticulate, unknown in female.

Description of male holotype. Carapace (Fig. 11A) large, with many setose tubercles. Dorsomedian region of carapace slightly humped towards rostrum, lateral carinae with six interspaced teeth on right carina, and five on left; submedian carinae with six interspaced teeth on right carina, five on left; median carina with four teeth in anterior half, thick protuberance at

midlength, six teeth in posterior half, extending from rostral base to near cervical groove; and anterolateral margin with small antennal tooth. Rostrum (Fig. 11B-F) narrowly triangular, sulcate dorsally, with seven lateral teeth on right side, six on left, discontinuous laterally with lateral margin of carapace. Cervical groove distinct at middle of carapace. Posterior thoracic region with median tuberculous carina, and low triangular cusp near posterior margin. Thoracic sternite 4 (Fig. 12A) with transverse intermediate line anteriorly; median slit distinct, with central pit. Abdomen setose, relative lengths of abdominal somites 1-6 and telson 1; 1.2; 1.1; 1.1; 1.1; 1.3 and 1.7. Pleuron 1 narrow, deflexed posteroventrally with apical tooth, transverse lateral carina between pleuron and tergum present in posterior half; pleuron 2 convex antero-posteriorly, truncate on ventral margin, sloping down posteriorly; pleura 3-5 rounded ventrally, each with denticle at anteroventral angle. Telson (Fig. 12B) about 1.5 times as long as wide, setose, with two pairs of medial teeth; lateral margins expanded with tooth at proximal 0.4 of length, and posterior to it, two teeth on right side, four on left, without movable tooth at

posterolateral angle; posterior margin rounded with median tooth.

Eye cylindrical, with double-cornea, reaching to midlength of rostrum. Antennular pedun-

cle nearly reaching to distal end of antennal segment, segment 1 about 1.7 times length of segments 2 and 3 combined, expanded laterally on proximal 0.7, with denticle; long setae present

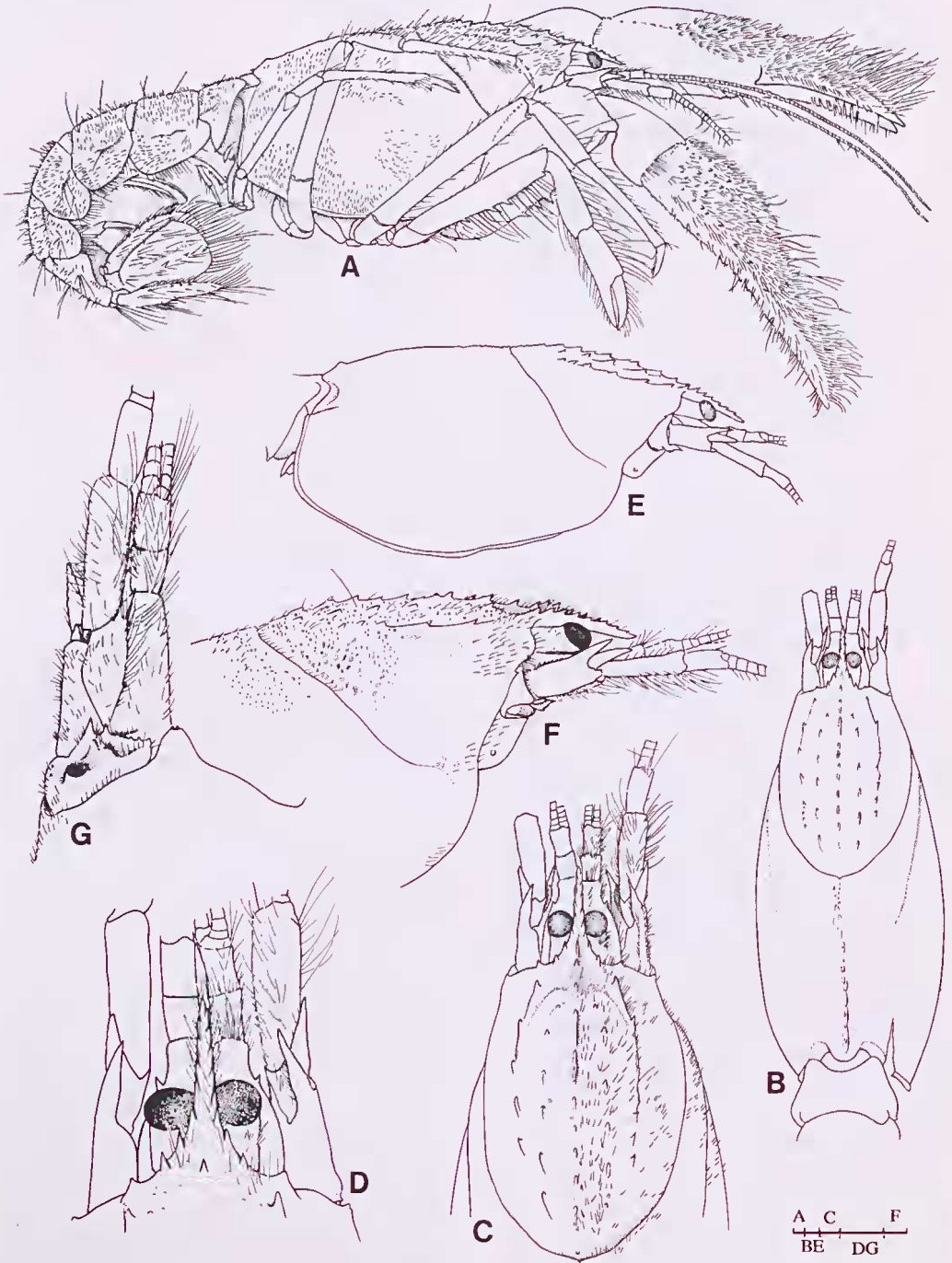


Fig. 11. *Acanthaxius polychaetes* sp. nov., male, holotype, NTM Cr.007156: A, whole body, lateral aspect; B, carapace, dorsal aspect; C, dorsomedian region, dorsal aspect; D, anterior part of carapace, dorsal aspect; E, carapace, lateral aspect; F, dorsomedian region, lateral aspect; G, antennule and antenna, ventral aspect. Scale in 1 mm divisions.



Fig. 12. *Acanthaxius polychaetes* sp. nov., male, holotype, NTM Cr.007156: A, 3rd and 4th thoracic sternites, ventral aspect; B, sixth abdominal somite and tail-fan; C, maxilla 2, lateral aspect; D, maxilliped 1, medial aspect; E, maxilliped 2, lateral aspect; F, maxilliped 3, lateral aspect; G, crista dentata of ischium in maxilliped 3, medial aspect. Scale in 1 mm divisions.

on ventral margin; segment 3 longer than segment 2. Antennal segment 1 short, broader than long, flattened and setose on ventral surface, with sharp median tooth on distoventral margin, denticulate in its medial half (Fig. 11G); segment 2 with long, sharp distodorsal tooth; scaphocerite directed laterally beyond distodorsal tooth of segment 2, with small medial tooth proximally (Fig. 11C, D); segment 3 ending in distoventral tooth, fringed with thick setae on ventral margin; segment 4 subequal to segment 2 including its distodorsal tooth, 1.8 times as long as segment 5. Maxilla 2 (Fig. 12C) with

endopod deflexed at tip, with four slender distal setae; scaphognathite with single elongate posterior seta. Maxilliped 1 (Fig. 12D) with endopod biarticulate; exopod with slender, four-segmented process tipped with plumose setae. Maxilliped 2 (Fig. 12E) with epipod carrying podobranch. Maxilliped 3 with coxa bearing a sharp distal tooth on posteromedial margin; basis with strong tooth, and thick setae on medial surface; ischium (Fig. 12F) with three medial teeth, crista dentata (Fig. 12G) strongly serrate, exceeding ischium distally; merus subequal to ischium, with three teeth on medial

margin; carpus with subterminal tooth on medial margin; propod subequal to carpus, 1.5 times length of dactyl; podobranch with epipod.

Pereopod 1 asymmetric; coxa carinate with sharp proximal tooth on posteromedial margin, and distal to it deflected in distal half to two marginal carinae, medial carina terminated by sharp tooth; basis carinate with sharp tooth on posteromedial margin; ischium with one to three ventral teeth, one on right side, and three on left side, the distal tooth sharp, other teeth small in size.

Left, larger pereopod 1 with merus 1.8 times as long as broad, dorsal margin carinate with four teeth in distal half, ventral surface setose, with six stout teeth medially, and carinate laterally, with tubercles, and lateral surface with sharp tooth just ventral to distal articulation; carpus (Fig. 13A) 0.66 of length of merus, lateral surface roughly tuberculate on dorsal half of distal margin, medial surface with row of fine tubercles on distal margin; chela 2.2 times as long as broad, slanting on lateral surface, lateral surface smooth with few denticles in proximal half, and thickly setose in distal half, dorsal margin unarmed, ventral surface carinate laterally, with six interspaced teeth; fixed finger incurved apically, cutting edge with thick tooth at proximal part, and series of teeth in distal three-quarters length (Fig. 13B); dactyl slightly shorter than palm, lateral surface with thick carina medially, cutting edge with row of three stout teeth in proximal half, robust tooth at midlength, largely concave with row of rounded teeth on distal half, tip strongly incurved.

Right, smaller pereopod 1 with merus more slender than in larger pereopod, twice as long as broad, dorsal margin carinate with two teeth in distal part, ventral surface setose, with five stout teeth medially, carinate, with row of small tubercles laterally, and lateral surface with sharp tooth just ventral to distal articulation; carpus (Fig. 13C) narrower than that of larger pereopod 1, lateral surface roughly tuberculate on distal margin, medial surface finely tuberculate on distal margin, and small distodorsal tooth on dorsal margin; chela 3.5 times as long as broad, lateral surface thickly setose in most part, denticulate in its ventroproximal part; palm 1.4 times as long as broad, dorsal margin with three small teeth, ventral margin carinate with row of denticles in proximal part, and four teeth in middle part; medial surface less setose than on lateral surface, and roughly tuberculate; fixed

finger slender, covered by thick setae, with row of teeth on cutting margin, and strongly incurved at tip; dactyl (Fig. 13D) slender, longer than palm, appears regularly serrate by small pointed teeth on cutting edge, carinate in midline on medial surface, and strongly incurved at tip.

Pereopod 2 with coxa having short carina with sharp proximal tooth on posteromedial margin, and distal to it, deflected into two weak carinae, medial carina with two small teeth distally; basis with subterminal ventral tooth; ischium with five ventral teeth; merus elongate, with four ventral teeth, lateral surface with tooth just ventral to distal articulation; carpus 0.6 of length of merus, unarmed; chela 1.2 times as long as carpus; dactyl subequal to palm. Pereopod 3 with coxa carinate on proximal half, with sharp tooth on posteromedial margin, and distal to it, deflected to distal half; basis unarmed; ischium with few ventral teeth; merus with subterminal ventral tooth; carpus 0.4 of length of merus; propod (Fig. 13E) 1.3 times as long as carpus, with row of ten transparent spines ventrolaterally, with sharp distoventral spine. Pereopod 4 with coxa carinate proximally, with sharp proximal tooth on posterior margin, three small distal teeth on distomedial margin; basis and ischium unarmed; merus with small subterminal ventral tooth; carpus 0.4 of length of merus; propod 1.8 times as long as carpus, with bands of setae on ventrolateral margin. Dactyl about 0.33 of length of propod. Pereopod 5 with coxa unarmed, bearing genital pore on medial surface; basis, ischium and merus unarmed; carpus third length of merus; propod 3.2 times as long as carpus, protruded distolaterally with series of transparent teeth on cutting edge (Fig. 13F); dactyl 0.3 of length of propod, bearing proximal protuberance with row of transverse denticles on cutting edge.

Pleopod 1 in male (Fig. 13G) rod-like, biarticulate, distal segment 0.6 of length of proximal segment. Pleopod 2 slender, foliaceous (Fig. 13H); endopod with free appendix interna and appendix masculina. Pleopods 3-5 also slender, endopod with free appendices internae.

Uropod with protopod unarmed. Uropodal exopod about 1.3 times as long as broad, slightly convex with five to six teeth laterally, movable tooth at distolateral angle, and row of teeth on transverse suture. Uropodal endopod about as long as exopod or telson, with two to three teeth on lateral margin, and four to five teeth on median rib.

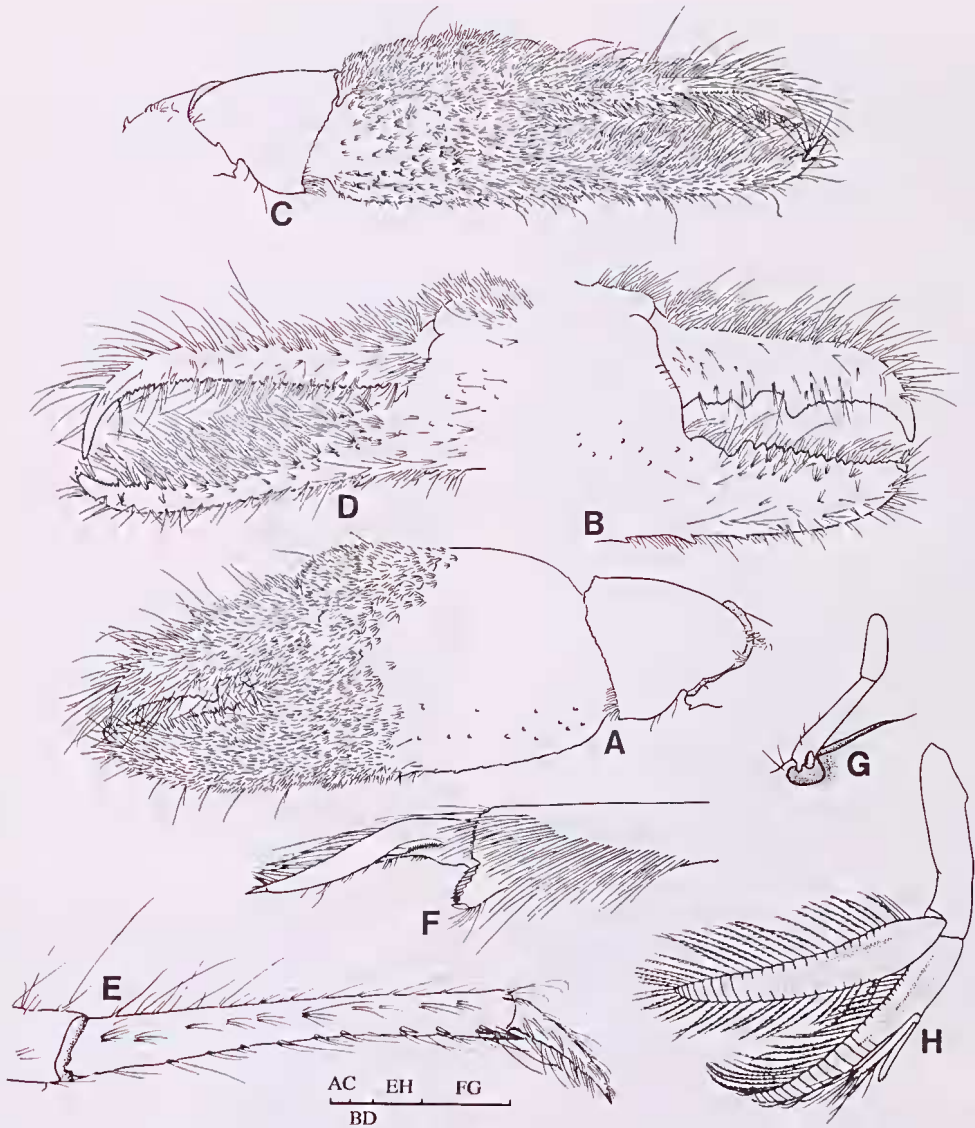


Fig. 13. *Acanthaxius polychaetes* sp. nov., male, holotype, NTM Cr.007156: A, larger pereopod 1, lateral aspect; B, distal part of chela in larger pereopod 1, medial aspect; C, smaller pereopod 1, lateral aspect; D, distal part of chela in smaller pereopod 1, medial aspect; E, propod and dactyl in pereopod 3, lateral aspect; F, distal part of propod and dactyl in pereopod 5, medial aspect; G, pleopod 1 in male, lateral aspect; H, pleopod 2, anterior aspect. Scale in 1 mm divisions.

Etymology. The species name, “*polychaetes*”, is derived from the Greek, “poly” meaning many, and “chaete” meaning setae, which are found on the surface of the body and the first pereopod.

Remarks. This species is most similar to *A. hirsutimana* Boesch and Smalley, 1972, from off British Guiana in the northern Gulf of Mexico, in the shape of the scaphocerite, the tail-fan, the presence of the dorsomedian carina in the poste-

rior thoracic region, the antennal tooth on the anterolateral margin of the carapace, the appendix interna and appendix masculina in males, and the unequal first pereopods. However, this species is distinguished from *A. hirsutimana* and other species of *Acanthaxius* in that the lateral surface of pereopod 1 are densely and finely setose, the palm of the larger pereopod 1 is unarmed on the dorsal margin, but that of the smaller pereopod 1 has three teeth.

Genus *Axiopsis* Borradaile

Axiopsis Borradaile, 1903: 538. - Sakai and de Saint Laurent, 1989: 76.

Definition. Rostrum triangular, pointed at tip. Dorsomedian region of carapace slightly convex anteriorly, bordered by lateral carina of carapace on each side. Abdominal pleura 2-5 rounded ventrally. Telson subsquare or oblong. Eye subglobose, cornea pigmented. Antennal segment 2 with prominent distodorsal tooth, scaphocerite also prominent, usually with medial tooth proximally. Pereopod 1 unequal, fingers of smaller cheliped shorter than palm. Pereopod 3 with propod bearing transverse rows of spines laterally. No pleurobranch. Pleopod 1 in male absent, and in female with two segments, distal segment multiarticulate. Pleopods 2-5 in both male and female with appendices internae, pleopod 2 in male with appendix masculina. Uropodal exopod with transverse suture.

Type species. *Axiopsis affinis* De Man, 1888, designated by Borradaile, 1903: 538.

Remarks. The generic definition is here revised with additional characters such as the status of the dorsomedian region, antennal segment 2, abdominal pleura 2-5, the propod of pereopod 3, pleopods 2-5, and the relative length on the fingers and palm of the smaller cheliped.

Poore and Griffin (1979: 230) reported *Axiopsis consobrina* from Queensland, however, as stated in the remarks below, the identity of their specimens is questionable. However, three specimens from North-West Shelf, Western Australia, are here defined as *A. consobrina*.

Axiopsis consobrina De Man (Fig. 14)

Axiopsis consobrina De Man, 1905: 595 (part). - Sakai and de Saint Laurent, 1989: 77.

Axiopsis (Axiopsis) consobrina - De Man, 1925b: 80 (part), pl. 6 fig. 13-13c.

nec. Axiopsis (Axiopsis) consobrina - Poore and Griffin, 1979: 230, fig. 4; - Tirmizi, 1983: fig. 4 (not *A. consobrina*).

Material. LECTOTYPE - one male, ITZA, TL 34.0 (TL 29.5 measured by De Man, 1925b: 81), Siboga-St. 305. ITZA, one female, TL 32.0 (TL 28.0 measured by De Man, as cited above), Siboga-St. 204. NTM Cr.000817, one male, TL 17.5, CL 5.3, North-West Shelf, WA, 19°04.4'S 118°47.3'E, 82 m, 28 April 1983, coll. A.J. Bruce, FRV *Soela*, trawl. NTM Cr.007157, two

females, TL 11.0, CL 4.0; TL 8.0, CL 2.6, North-West Shelf, WA, 83 m, 27 April 1983, coll. FRV *Soela*, trawl.

Diagnosis of male lectotype. Dorsomedian region of carapace with lateral carina with eight to nine teeth, submedian carina with eight teeth, median carina with 15 teeth, and intermediate regions between carinae unarmed; anterolateral margin of carapace with small antennal tooth (Fig. 14B), but unarmed on pterygostomial region. Rostrum (Fig. 14A) triangular, acuminate, with five lateral teeth, continuous laterally with lateral carina of carapace. Pleuron 1 rounded at ventral angle; pleura 3-5 with small tooth on anterior margin, and pleuron 6 without an apical tooth ventrally.

Antennal segment 2 with distodorsal tooth reaching midlength of segment 4, scaphocerite extending to near distal margin of segment 4, bearing strong proximal tooth on medial margin. Maxilliped 3 with ischium bearing two distinct medial teeth; merus with five medial teeth, distally increasing in size; carpus with distomedial tooth. Pereopod 1 (Fig. 14C-D) unequal; fingers of larger cheliped distinctly shorter than palm, these of smaller cheliped about as long as palm.

Pleopod 1 absent. Pleopod 2 in male with appendices masculinae and internae. Pleopods 3-5 with appendices internae.

Remarks. Three type specimens designated as *Axiopsis consobrina* by De Man (1905: 595, 1925b: 80) were re-examined. It was observed that they included two species, *A. consobrina* and *A. tsushimaensis* Sakai, 1992. The young specimen from north of Sulu Island, 275 m, belongs to *A. tsushimaensis* Sakai, 1992, due to the absence of the proximal tooth on the medial margin of scaphognathite. The other two specimens, one female from the northern entrance of Butung Strait, Sulawesi, 75-95 m, and one male from Solor Strait, 113 m, are confirmed as *A. consobrina*, and therefore the latter male specimen is here designated as the lectotype of *Axiopsis consobrina* to separate the other species, *A. tsushimaensis*. *Axiopsis consobrina* is evidently distinguishable from *A. tsushimaensis* by the presence of the sharp proximal tooth on the medial margin of the scaphocerite, and the dorsomedian region of the carapace lacks teeth on the intermediate regions of the longitudinal carinae, while in *A. tsushimaensis* the proximal tooth on the medial margin of the scaphocerite is absent, and the dorsomedian region of the

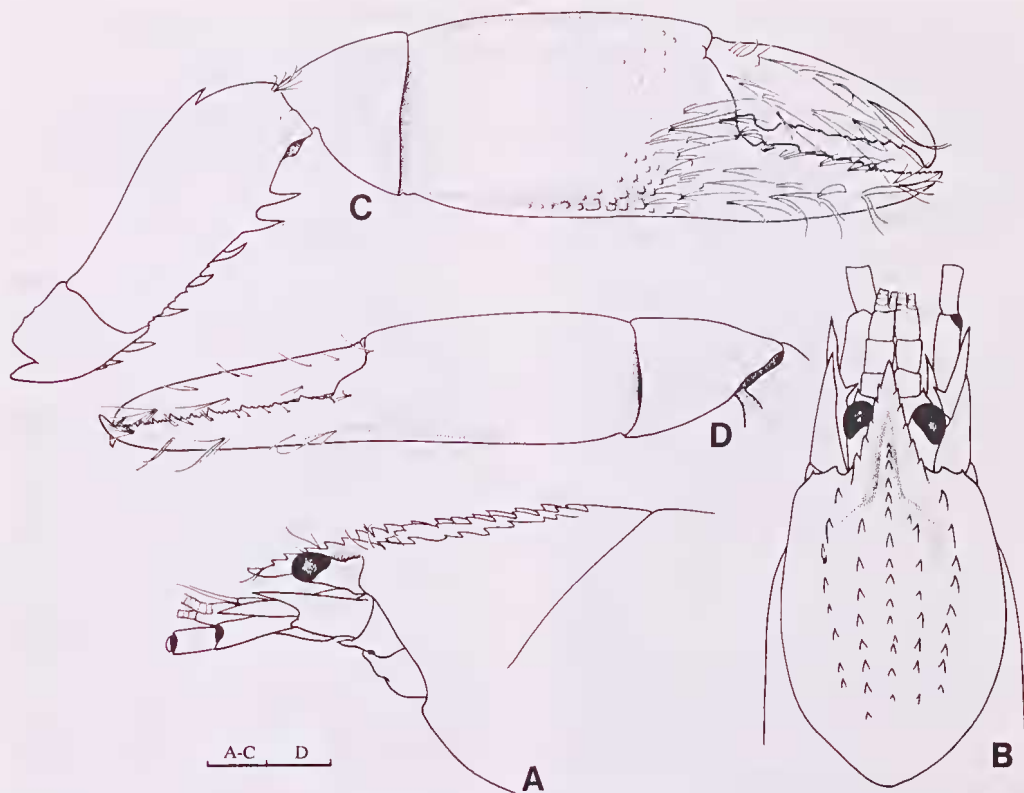


Fig. 14. *Axiopsis consobrina* De Man, m, lectotype, ITZA: A, dorsomedian region, lateral aspect; B, dorsomedian region, dorsal aspect; C, larger pereopod 1, lateral aspect; D, chela and carpus of smaller pereopod 1, lateral aspect. Scale in 1 mm divisions.

carapace has some teeth on the intermediate region of the longitudinal carinae.

De Man (1925b: 84) mentioned that the young specimen differed from the other two by the characters of the gastric region, however, the teeth on the longitudinal carinae of the gastric region are variable as shown in the Table 1. In the description of *A. consobrina*, the status of the proximal tooth on the medial margin of the scaphocerite and the median tooth on the posterior margin of the telson was overlooked.

Tirmizi (1983: 91) described a female specimen from Bali, Indonesia, as *A. consobrina*, which differs from the lectotype because the gastric region has scattered denticles between the median and submedian carinae, although the scaphocerite of antenna 2 has a small basal medial tooth.

The presence or absence of the antennal tooth on the anterolateral margin of the carapace, the tooth on the pterygostomial region, the proximal tooth on the medial margin of the scaphocerite, and the number of teeth on the

lateral, submedian, and median carinae are inconsistent in *A. consobrina*.

Poore and Griffin (1979:230) described *A. consobrina* from the Gulf of Carpentaria, Queensland. I was not able to access their specimens, however, they apparently differ from the lectotype

Table 1. Variation of characters in *Axiopsis consobrina*. St. Spec. No. = S, station number of Siboga Expedition; n, catalogue number of specimen belonging to NTM; antenn. tooth = antennal tooth; pterygost. tooth = pterygostomial tooth; (*) measurements taken by De Man, 1925.

St. Spec. No.	S305	S204	N817	N7157	N7157
Sex	♂	♀	♂	♀	♀
TL (mm)	34.0 (29.5)*	32.0 (28.0)*	17.5	11.0	8.0
Antenn. tooth	+	+	+	-	-
Pterygost. tooth	-	+	+	-	-
Rostrum	.	.	.	.	.
lateral teeth	5	4-5	3-5	6	4-5
Longitud. carinae					
lateral teeth	9	8-9	6	5-8	9-12
submed. teeth	7-8	7	6-8	7-9	7-8
median teeth	13	16	12	10	9

and the specimens examined in this study. In Poore and Griffin's specimens the eye peduncle is slender, the median carina of the carapace is a double row of teeth in part of the posterior third, and the distodorsal tooth of antennal segment 2 is nearly as long as segment 4.

Type locality. Solor Strait, Indonesia, 113 m.

Distribution. 75-113 m deep. Indonesia; Queensland, Australia; Japan.

KEY TO THE AUSTRALIAN AXIIDAE

- 1 a. Pereopod 3 with broad propod, without transverse rows of spines laterally 2
- b. Pereopod 3 with slender propod, with transverse rows of spines laterally 6
- 2 a. Uropodal exopod with transverse suture *Axius australiensis*
- b. Uropodal exopod without transverse suture 3
- 3 a. Rostrum bifurcate anteriorly; uropodal exopod spinose laterally; pleurobranches present (*Neaxius*) 4
- b. Rostrum triangular; uropodal exopod smooth laterally; pleurobranches absent (*Strahlaxius*) 5
- 4 a. Cervical groove spinous laterally; antennal segment 2 with one medial and two to five lateral teeth proximally
..... *Neaxius acanthus*
- b. Cervical groove smooth; antennal segment 2 unarmed *Neaxius glyptocercus*
- 5 a. Rostrum spinous laterally; uropodal exopod U-shaped, widest at midpoint
..... *Strahlaxius plectrorhynchus*
- b. Rostrum usually with reduced lateral spinulation; uropodal exopod subtriangular, widest distally
..... *Strahlaxius waroona*
- 6 a. Hermaphroditic; pleopod 1 biarticulate, distal segment spatulate or bilobed; pleopod 2 with appendix masculina .. 7
- b. Gonochoristic; pleopod 1 in male biarticulate, distal segment simple, or absent; pleopod 2 with or without appendix masculina 9
- 7 a. Pereopod 2 with chela setose laterally; abdominal pleura 2-4 acute ventrally ..
..... *Spongiaxius brucei*
- b. Pereopod 2 with chela not setose laterally; abdominal pleura 2-4 rounded ventrally 8
- 8 a. Cornea pigmented; rostrum triangular; antennal segment 2 with prominent distodorsal tooth, prominent scaphocerite also present *Bouvieraxius rudis*
- b. Corneal pigment absent; rostrum elongate; antennal segment 2 with reduced distodorsal tooth, scaphocerite also reduced *Ambiaxius franklinae* sp. nov.
- 9 a. Dorsomedian region of carapace convex, dropping steeply posterior to rostrum; rostrum short 10
- b. Dorsomedian region of carapace weakly convex posterior to rostrum, or at same level with rostrum; rostrum well developed 11
- 10 a. Pereopod 1 subequal; scaphocerite with curved tooth; telson with movable distolateral tooth; uropodal exopod with transverse suture; pleurobranches absent *Dorphanaxius appendiculus*
- b. Pereopod 1 strikingly unequal; scaphocerite reduced; telson without movable distolateral tooth; uropodal exopod without transverse suture; pleurobranches present *Scytoleptus serripes*
- 11 a. Uropodal exopod without transverse suture; pereopod 1 with broad merus; pereopod 2 with chela setose laterally .
Platyaxius brevirostris gen. and sp. nov.
- b. Uropodal exopod with transverse suture; pereopod 1 with slender merus; pereopod 2 with chela not setose laterally 12
- 12 a. Scaphocerite short, bifurcate distally ...
..... (*Eutrichocheles*) 13
- b. Scaphocerite elongate, simple or with medial tooth proximally 15
- 13 a. Telson without posteromedian tooth; submedian carina of carapace obscure or absent
..... *Eutrichocheles pumilus* sp. nov.
- b. Telson with posteromedian tooth; submedian carina of carapace present ... 14
- 14 a. Submedian carina of carapace smooth .
..... *Eutrichocheles brocki*
- b. Submedian carina of carapace spinulate *Eutrichocheles austrinus* sp. nov.
- 15 a. Abdominal pleura acute ventrally; pleurobranches present
..... *Calaxius acutirostris*
- b. Abdominal pleura rounded ventrally; pleurobranches absent 16
- 16 a. Pereopod 1 with chela setose laterally; eye with double cornea
..... *Acanthaxius polychaetes* sp. nov.
- b. Pereopod 1 with chela not setose; eye with single cornea 17

- 17 a. Submedian carina of carapace smooth; median carina also smooth, but with one to three teeth anteriorly
..... *Calocarides werribee*
- b. Submedian and median carinae of carapace spinulate *Axiopsis consobrina*

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